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REMEDIATION DIVISION
Corrective Action Section

SWR # 63003

CAS DOC # 12555
PROJ MGR A. Posnick

9 April 2001

ATZC-DOE (200)

MEMORANDUM FOR:

Allan Posnick
DSMOA Program Manager
Corrective Action Section, Attn: MC-127
Texas Natural Resource Conservation Commission
P.O. Box 13087
Austin, Texas 78711-3087

SUBJECT: Response Action Completion Report (RACR) for the Montana Road Rubble Dump Spill Site, SWMU 16, FTBL-028, EPA TX HSWA Permit I.D. # 4213720101, issued July 1991

1. Attached for your review and approval is the Response Action Completion Report (RACR) for the Montana Road Rubble Dump Spill Site, SWMU 16, FTBL-028.
2. The discovery of asbestos roofing shingles and evidence that unknown local personnel had discarded used engine oil at the site during the initial EPA inspection and survey of Fort Bliss earned this site its designation as a SWMU. Subsequently investigation revealed that this area along side a power line easement was more properly an informal, unauthorized dumping ground for local civilian contractors and landscapers as well as citizens from the nearby residential areas across Montana Road from the reservation.
3. Previously, access was not controlled as this area of the Fort Bliss Military Reservation was not fenced and gated. As part of the response actions, Fort Bliss has constructed a fence along Montana Road to control access to the area and prevent future use of this area as a dumpsite. The enclosed RACR summarizes the cleanup activities and results of sampling that were performed at the property. Results presented in the report demonstrate that the conditions at the property meet the Remedy Standard A requirements under the Texas Risk Reduction Program (30 TAC, Chapter 350).
4. Based on the completed response actions, Fort Bliss is requesting a "no further action" letter for this site. Please direct any questions to me by calling 915-568-7979 or email (dodged@bliss.army.mil).

Sincerely,

David Dodge
Engineering and Environment, Inc.
IRP Project Manager

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REMEDATION DIVISION
Corrective Action Section

RESPONSE ACTION COMPLETION REPORT

FORT BLISS RUBBLE DUMP SITE- SMWU 16

Montana Road Near Site Monitor

Fort Bliss, Texas

Prepared for:

Fort Bliss Directorate of Environment
HQ USAADACENFB
ATZC - DOE B622
Fort Bliss, Texas 79916-6816

Prepared by:

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Houston, Texas 77056

March 2001

**RESPONSE ACTION COMPLETION REPORT
RUBBLE DUMP SITE
FORT BLISS, TEXAS**

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RUBBLE DUMP SPILL SITE
FORT BLISS, TEXAS**

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RUBBLE DUMP AND SPILL SITE
FT. BLISS, TEXAS**

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EXECUTIVE SUMMARY

INTRODUCTION

The purpose of the closure activities and this report is to provide environmental and physical site data to support a Remedy Standard A, Tier 1 Closure of the site in accordance with the Texas Risk Reduction Program (TRRP) promulgated as 30 *Texas Administration Code* (TAC) Chapter 350. This report also documents that steps taken to prevent that dumping at the site will not occur in the future.

SITE DESCRIPTION

The site is located on the Fort Bliss Military Reservation, and was used as an unauthorized dumping area by unknown, but presumed local persons. Historically, access was not controlled and this area of the Fort Bliss Military Reservation was not fenced or gated. The area was never used as a dump site by Fort Bliss, but could easily be accessed by others from Montana Road to dispose of general refuse and construction debris so as to avoid the disposal fees at the local landfill.

RESPONSE ACTIONS

Response actions have been completed to restore the site conditions and to obtain regulatory closure. A variety of waste material including hydrocarbon contaminated soil, asbestos-containing materials (ACM), and general construction/demolition debris and trash were removed from the site and properly disposed at approved facilities. Reconnaissance and verification sampling was performed to document that waste material is no longer at the site and the site conditions are suitable for closure.

CONCLUSIONS

Based on the data and information presented in this report, the following conclusions are provided for the Rubble Dump Site.

- Approximately six cubic yards of hydrocarbon- impacted soil were excavated and transported to the Camino Real Landfill in New Mexico for disposal, and approximately four cubic yards of ACM were removed and transported to the Otero County Landfill in New Mexico for disposal.
- Approximately 1,638 cubic yards of non-hazardous construction/demolition debris were removed and transported to the Camino Real Landfill in New Mexico, and the Clint and Fort Bliss Landfills in Texas for disposal.
- The horizontal and vertical extent of impacted soils has been delineated to concentrations either below the laboratory practical quantitation limits (PQLs, method detection limits) or the critical Tier 1 Protective Concentration Levels (PCLs) for organic and inorganic constituents.
- An ecological evaluation was performed, and the results indicate that the site does not pose unacceptable risks to ecological receptors.
- Concentration of constituents remaining in the soils are below the Tier 1 Residential PCLs. Therefore, the Rubble Dump Site is in compliance with a Remedy Standard A, Tier 1 Closure and no further action is required.
- A fence was installed along Montana Road and the Site Monitor access road to control access and prevent future dumping.
- This Response Action Completion Report along with the associated appendices comply with the requirements of the Affected Property Assessment Report, 30 TAC §350.51 through §350.55.

1.0 INTRODUCTION

This report presents the results of response actions associated with remediation and restoration of the Rubble Dump Site at Fort Bliss, Texas. The purpose of the closure activities and this report is to provide environmental and physical site data to support a Remedy Standard A, Tier 1 Closure of the site in accordance with the Texas Risk Reduction Program (TRRP) promulgated as 30 *Texas Administration Code* (TAC) Chapter 350. This report also documents that steps taken to prevent that dumping at the site will not occur in the future. The remainder of this section provides descriptive information on the site as well as a summary of previous activities that have occurred at the site.

1.1 FACILITY LOCATION AND DESCRIPTION

The Rubble Dump Site is located southeast of Biggs Army Air Field just west of the Fort Bliss Site Monitor (radar) facility. A location map is provided as Figure 1. The site consists of an approximate one-mile long section along a north-south trending power line easement that originates off of Montana Road in El Paso, El Paso County, Texas. The site has been identified as the area extending 100-feet on either side of the one-mile long section of the power line easement. This site is located on the Fort Bliss Military Reservation, and was used as an unauthorized dumping area by unknown, local persons. Historically, access was not controlled and this area of the Fort Bliss Military Reservation was not fenced or gated. The area was never used as a dump site by Fort Bliss, but could easily be accessed by others from Montana Road to dispose of general refuse and construction debris so as to avoid the disposal fees at the local landfill. A land use map is provided as Figure 2, and this map shows the site and surrounding area.

The dumping area was discovered during a 1987 Resource Conservation and Recovery Act (RCRA) Facility Assessment (RFA), and the site was added to the Fort Bliss Installation Action Plan. The site is identified as Fort Bliss site FTBL-028 and RCRA Solid Waste Management Unit (SWMU) No. 16. Materials that have been dumped at the site consist of construction/demolition debris, furniture, asphalt, plastic, wood, used building products (shingles, tiles, etc.), and general trash. Petroleum/oil/lubricant (POL) stains have also been identified within the site. The stains were observed to be relatively small and most likely the

result of automobile or similar vehicle engine oil changes. In addition, areas of charred debris also suggest that some of the debris piles were historically burned.

The site and surrounding area north of Montana Road is undeveloped and characteristic of the local desert terrain. The area south of Montana Road is composed of both commercial and residential properties. Other than the historical unauthorized dumping, the area identified as the Rubble Dump Site is used only as a buffer between the public and military activities to the north.

1.2 BACKGROUND INFORMATION

1.2.1 Preliminary Site Investigation

Following discovery of the site during the 1987 RFA, the site was identified as a SWMU and added to the Fort Bliss Installation Restoration Program (IRP) for action. A Preliminary Site Investigation was subsequently scheduled and completed in 1995, where a total of 15 soil samples and 13 samples of potential asbestos-containing material (ACM) were collected for laboratory analyses (Golder, 1997). A copy of the Preliminary Site Investigation Report is provided as Appendix A. Sampling locations were selected based on the results of a field survey where high priority areas were identified. The high priority areas consisted of potential areas of ACM, areas where solvent or paint cans were identified, and areas where black stained soil (possibly associated with releases of POL or from burnt construction debris) were located. In summary, the areas with the highest potential for contamination were sampled during the Preliminary Site Investigation.

Elevated levels of semi-volatile organic compounds (SVOCs) and total petroleum hydrocarbons (TPH) were reported in several of the soil samples, and several samples were reported positive as ACM. Soil sample locations from the Preliminary Site Investigation are shown in Figure 3, and a summary of the sampling results is provided in Table 1.

1.2.2 Site Characterization

In August 1997, a Site Characterization sampling event was conducted to further identify and quantify the presence of petroleum impacted soil and asbestos containing material at the site (Golder, 1999). A copy of the Site Characterization Report is provided as Appendix B. As part

of the Site Characterization, a review of aerial photographs and additional site reconnaissance was performed. The results of the aerial photograph review were inconclusive since the scales of the available photographs were too large, and features within the site were not distinguishable from the surrounding desert. Site reconnaissance concluded that there were only two new waste piles that were not previously identified during the Preliminary Site Investigation.

Based on the available information, a total of 50 samples of potential ACM and 18 soil samples were collected for laboratory analyses. The Site Characterization sampling locations were selected to evaluate additional areas of waste disposal along the easement, further evaluate the results of the Preliminary Site Investigation, and investigate two new areas of waste that were believed to have been created after the 1995 Preliminary Site Investigation. The soil sample locations coincided with many of the initial sampling locations that are shown on Figure 3.

The sampling results revealed that 26 of the 50 construction debris samples were positive as ACM. Low concentrations of volatile organic compounds (VOCs) were detected in 4 of the 18 soil samples. The VOCs mainly consisted of acetone, methylene chloride, and 2-butanone, and these were reported at concentrations below health based standards (TRRP) developed by the Texas Natural Resource Conservation Commission (TNRCC). SVOCs were not reported in any of the samples above the laboratory practical quantitation limit (PQL). Elevated concentrations of TPH were reported in surface soils at five locations as illustrated on Figure 3. A summary of the results of the 1997 Site Characterization is provided in Table 1.

1.2.3 Response Actions

In December 1999, remediation and restoration activities were completed at the site. The results of the response actions are summarized in the Environmental Technical Report that is provided as Appendix C (Encon, 2000). The following activities were completed as part of the response action:

- Completed a site reconnaissance visit to verify the extent of impacted soil, ACM, and construction debris.
- Repaired the existing earthen berm that extends approximately 1.7 miles along Montana Road to make access to the area more difficult.
- Installed a 5,800-foot long, 4-strand barbwire fence along the Montana Road earthen berm to control access to the area and reduce illegal dumping.
- Excavated and disposed of approximately 6 cubic yards (CY) of hydrocarbon impacted soil.

- Collected one verification composite soil sample from the excavation areas for benzene, ethylbenzene, toluene, and xylenes (BETX) and TPH (TX Method 1005).
- Removed and disposed of approximately 1,638 CY of non-hazardous construction/demolition debris.
- Removed and disposed of approximately four yards of ACM.

The specific objective of the remediation activities included the removal of hydrocarbon impacted soil, ACM, and construction/demolition debris. The areas that were excavated correspond to the areas where elevated levels of TPH and SVOCs were reported in characterization samples. The excavation areas were labeled P1 through P4 as shown on Figure 4. Following excavation and scraping, one verification sample was collected (as a composite of the four excavation areas) to confirm removal of the hydrocarbon affected soils. Neither BTEX nor TPH were reported in the verification sample above the laboratory PQL. Disposal activities were conducted in accordance with applicable Federal, State, and disposal facility requirements (additional discussion on the removal and disposal activities is provided in Section 3).

1.3 REPORT ORGANIZATION

The remainder of this report is organized as listed below, and supporting documentation is provided as appendices for reference.

- Section 2 discusses the environmental setting based on current and previous investigations conducted at the site.
- Section 3 presents more detailed discussion of the response actions that were completed at the site, and a summary of the analytical results from verification samples collected from the site.
- Section 4 presents other field activities that were completed to prevent future access to the site for unauthorized dumping.
- Section 5 provides conclusions drawn from the response actions that have been completed at the site.

2.0 ENVIRONMENTAL SETTING

The following subsections present discussions of the physical characteristics of the site, information on soils, and the results of a sensitive receptor survey. The information describing the site soils and sensitive receptor survey were taken from the Preliminary Site Investigation Report (Golder, 1997) and the Site Characterization Report (Golder, 1999).

2.1 SITE SOILS

Soils encountered at the site consisted of medium to fine-grained sand extending to depths ranging from the surface to 12-inches below ground surface (bgs), the maximum depth explored. Since the visual staining and waste material was not identified at depth, information regarding subsurface soils at the Rubble Dump Site is not known. However, information collected from other similar areas of Fort Bliss indicates that the subsurface soils are characteristic of sands and gravels with occasional clay interbeds to depths of up to several hundred feet. Saturated conditions are not known to occur at shallow depths.

2.2 SURFACE FEATURES

The site is a relatively flat rectangular-shaped property consisting of approximately 25 acres. The United States Geological Survey (USGS) quadrangle map, presented as Figure 2, indicates that the site lies at an elevation of approximately 3,965 feet above mean sea level. The ground surface at the site is mostly unvegetated, with an estimated 20% being covered with small scrub brush. Observations made during the field investigation indicate that drainage from the site varies along power line road, but no observable drainage pathways or channels exist at the site.

No natural gullies or creeks cross the site. The nearest receiving water bodies are an unnamed pond located approximately 1,500 feet to the southwest and Jesuit Draw located approximately 3-miles to the southeast. Both of these are on the opposite side (south) of Montana Road, and runoff from the Rubble Dump Site would not be directed to these features.

2.3 LAND USE

The Rubble Dump Site is located on the Fort Bliss Military Reservation. Since the area of the Reservation where the Rubble Dump Site is close to commercial and residential areas that are south of Montana Road, it is not used by Fort Bliss. Other than the power line easement, no structures exist at or near the site. The master plan for Fort Bliss shows that the area encompassing the Rubble Dump Site as not currently nor expected to be used in the future. The area is planned as a buffer zone between Fort Bliss and the developed areas south of Montana Road.

2.4 SENSITIVE RECEPTOR SURVEY

The following is a summary of the Sensitive Receptor Survey (SRS) conducted during this investigation. The SRS consisted of a water well search, a utility assessment, and an ecological assessment to evaluate what receptors, if any, and/or exposure pathways exist at the site or within ½-mile of the site.

2.4.1 Water Well Survey

A water well search was conducted for the area within ½-mile of the site, and a copy of the report is included as Appendix D. The water well search included document review from the following state and federal agencies:

- Texas Water Development Board
- Texas Natural Resource Conservation Commission
- United States Geological Survey

A total of four wells were identified by Environmental Data Resources, Inc. (EDI) within ½-mile of the site. Three of the wells (49-14-503, -511, and -512) are reportedly still in use and are located southeast of the Rubble Dump Site. One well (49-14-505) has reportedly been abandoned. All of the wells are categorized as being domestic/public water supply wells, and none of the wells are located on Fort Bliss.

The completion depths of the three water wells remaining in use (49-14-503, -511, and -512) are 455, 430, and 440 feet bgs, respectively. The screened intervals are 365 to 455 feet bgs for well 503, 340 to 440 feet bgs for well 511. The screened interval for well 512 was not reported. Based on these screened intervals and the location of the wells, impacts from the Rubble Dump Site do not exist.

2.4.2 Utility Assessment

No subsurface utilities are located adjacent to or in the vicinity of the site. Overhead electrical lines are present within the right-of-way easement on the west side of the power line road. In addition, some utilities including underground telephone lines and overhead power lines are present along the north side of Montana Road. Contamination has not been identified near Montana Road, and impacts to utilities has not occurred.

2.5 ECOLOGICAL ASSESSMENT

In accordance with the Texas Risk Reduction Program, a Tier 1 Exclusion Criteria Checklist was completed for the site to determine whether or not further ecological evaluation is necessary. The completed Exclusion Criteria Checklist is included as Appendix E, and based on the outcome of the checklist, further ecological evaluation is not required.

3.0 RESPONSE ACTIONS

The following subsections describe the response actions that have been completed at the Rubble Dump Site. As mentioned previously, Fort Bliss is pursuing closure of the site according to the Texas Risk Reduction Program, specifically a Remedy Standard A (Residential) Closure. For this, the Tier 1 Residential Protective Concentration Levels (PCLs) established under TRRP have been used to evaluate the results of samples. The PCLs are concentrations that have been calculated by the TNRCC using conservative assumptions and exposure models to be protective of human health and the environment. This closure approach, if approved by the TNRCC, will allow for unrestricted use of the land and deed certification will not be required. Much of the information presented below was taken from previously prepared reports to provide a summary of the response actions that have been completed to restore the conditions at the site. Additional information can be obtained by reviewing the reports that are provided in the appendices.

3.1 REMOVAL OF HYDROCARBON IMPACTED SOIL

Four oil stained areas were identified during the Site Characterization, and these were referred to as Stations P1 through P4. Since the stations were relatively small, excavation of the visibly stained material was scheduled and completed. Approximately six (6) cubic yards of soil from the four areas (P-1 through P-4) were excavated and disposed off-site. A site map illustrating the areas of excavation is included as Figure 4. The excavated soils were stored in 55-gallon drums on-site pending laboratory analysis and waste characterization. Upon receipt of the sampling results, the drummed waste material was disposed at an approved facility as non-hazardous waste. Each excavation was then backfilled to surface grade with clean soil from the surrounding areas of the site.

One soil grab sample was collected from the base of each excavation before backfilling. The four grab samples were composited to form one verification sample (Fort Bliss #1) that was submitted for laboratory analyses. The sample was collected at a depth of approximately 0.5- to 1-foot bgs. The soil sample was collected using clean stainless steel scoops and latex gloves. Samples were placed into laboratory-supplied jars, labeled, and placed on ice in an insulated cooler. Upon completion of the sampling activities, the sample was submitted to Trace Analysis,

Inc. in El Paso, Texas. The verification sample was submitted for benzene, toluene, ethylbenzene, and xylenes (BTEX, EPA Method 8021) and TPH (TX Method 1005) analyses. Based on the results, BTEX and TPH were not reported above the laboratory PQL in the verification sample. The results are summarized in Table 2.

3.2 REMOVAL OF ASBESTOS CONTAINING MATERIALS

Seven ACM sites (O-3, O-5, O-17, O-32, O-40, O-54, and O-85) were previously identified during the 1997 Site Characterization (see Table 3, Site Characterization Report, Golder, 1999). Many of the samples were reported to contain between 5% and 35% chrysotile asbestos. Based on the asbestos testing, the identified floor tile and similar materials were removed from the site. The material was properly bagged by a licensed asbestos contractor in six millimeter polyvinyl bags, labeled, and transported to an EPA approved landfill for disposal. A total of 20 bags, or about four CY, of ACM were removed from the site and properly disposed.

3.3 REMOVAL OF CONSTRUCTION/DEMOLITION DEBRIS

Numerous piles of construction and other debris existed along the power line easement. The material was not hazardous, but the presence of the material was visibly unattractive. As part of the response activities, approximately 1,638 CY of non-hazardous construction/demolition debris was loaded into dump trucks and disposal at the Camino Real Landfill in New Mexico, and the Clint and Fort Bliss Landfills in Texas. The removal activities occurred over a four week period in early 2000.

3.4 WASTE CHARACTERIZATION AND DISPOSITION

The hydrocarbon impacted soil was placed into 55-gallon drums and stored onsite pending analytical results. Based on the analytical results for TPH, the soil was classified as a Class I, non-hazardous, regulated waste. On January 11, 2000, approximately six CY of the Class I, non-hazardous soil were transported to the Camino Real Landfill in New Mexico. Manifests for disposal of the soil is included are Appendix C.

On 29 December 1999, approximately four yards of ACM were transported by Environmental Reconditioning to the Otero County Landfill in New Mexico. The TNRCC hazardous waste manifest is included in Appendix C.

Since the construction debris was classified as unregulated non-hazardous waste, manifests were not required by the landfill. Trucking trip tickets were used to arrive at a total of 1638 CY of material that was removed and disposed at several approved landfills in the area.

3.5 VERIFICATION ACTIVITIES

After reviewing the available data on the site, Fort Bliss decided to collect additional verification samples to document that constituents of concern were not present at the site. In addition, Fort Bliss wanted to conduct additional site reconnaissance to document that additional waste disposal had not occurred at the site since completion of the removal activities. A site reconnaissance visit was conducted in November 2000, and evidence of additional waste disposal was not observed. Verification samples were then collected from four areas where elevated levels of TPH and SVOCs were reported in previously collected samples. These locations also corresponded to the areas scrapped and excavated during the response actions. The samples were labeled RSD-1V, RSD-6V, RSD-10V, and RSD-11V so as to correlate to previously established sample locations. The verification samples were collected from areas where small amounts of gray stained soils were located, and not in the excavation areas where backfill material was added. One additional sample was collected from an area near historical location RSD-24 where dark sandy was noticed during the November 2000 site reconnaissance. The samples were collected in November 2000 and January 2001, and the locations are shown on Figure 4.

The samples were collected at a depth of approximately 0.5-foot with new disposable plastic scoops. The samples were placed in clean and labeled sample containers, and the containers were then placed in a cooler with ice. At the end of the sampling activities, the sample labels were checked for completeness, additional ice was added to the cooler, and the samples were shipped to Severn Trent Services for analyses. Proper chain-of custody procedures were implemented, and appropriate documentation accompanied the sample shipment.

3.5.1 Laboratory Analyses

The verification samples were submitted for polynuclear aromatic hydrocarbons (PAHs) and RCRA metals. These analyses were selected because PAHs were the predominant fraction reported in the earlier SVOC results. Metals were included in the analytical approach since these had not been analyzed previously. One sample, RDS-10V, was also submitted for polychlorinated biphenyls (PCBs) to confirm the absence of this constituent group at the site. This location was selected since it was reported with the most individual PAH compounds at the highest observed concentrations. The verification samples were analyzed for one or more of the following parameters:

- PAHs in accordance with U.S. EPA Method 8310.
- PCBs in accordance with U.S. EPA Method 8082.
- Eight RCRA metals in accordance with U.S. EPA 6010/7000 series methods.

3.5.2 Verification Sample Results

The verification sampling results are summarized in Table 2, and individual laboratory reports are provided in Appendix F. The data were validated upon receipt, and no significant findings were noted that affected the results. Specific PQLs were at or below the TNRCC Tier 1 PCLs for individual soil analyses. One exception occurred for sample RDS-100 where the PQL for dibenz(a,h)anthracene (0.850 milligrams per kilogram [mg/kg]) was reported above the Tier 1 PCL of 0.55 mg/kg. No PAH constituents were reported in this sample, and the elevated PQL is not considered significant.

As shown in Table 2, low concentrations of a few PAH constituents were reported in some of the verification samples. In particular, phenanthrene, chrysene, acenaphthalene, fluorene, benzo(g,h,i)perylene, benzo(b)fluoranthene, and acenaphthylene were reported at low concentrations, some estimated below the laboratory PQL, in samples RDS-1V, RSD-10V, and RSD-11V. None of the concentrations exceeded the critical PCL. PCBs were not reported in RDS-10V, the only sample submitted for this analysis.

Regarding metals, chromium, cadmium, lead, and silver were reported in the verification samples. The concentrations of metals are below the Tier 1 PCLs for soil exposure, but some are

above the Tier 1 PCLs for groundwater protection. Background metals concentrations have been established for the Fort Bliss cantonment area; however, it is uncertain whether they would apply given the distance between the background sampling locations and the Rubble Dump Site. Therefore, the sample with the highest concentrations of metals (RDS-10V) was further tested by the Synthetic Precipitation Leaching Procedure (SPLP). The SPLP results were all below the PQL indicating that the metals are not leachable at the concentrations reported at the site, and the concentrations of metals are protective of groundwater.

3.5.3 Evaluation of Results

Historical investigation activities at the site revealed that some areas were affected primarily with hydrocarbon constituents at concentrations that exceeded acceptable levels. Additionally, ACM was present in areas of the site that required action. The hydrocarbon affected areas and the ACM was removed from the site and properly disposed. For the areas not excavated, instances of VOCs, TPH, and SVOCs were reported, however, the concentrations were all reported below the critical Tier 1 PCLs. Verification samples, collected from the areas where removal activities were completed, were not reported with constituent concentrations exceeding the critical PCLs. Therefore, the contamination has been removed, removal actions have been completed, and the site satisfies the requirements of a Remedy Standard A closure under the TRRP. Under this closure approach, no further action is required at the site.

4.0 IMPROVEMENT ACTIVITIES

The following subsections describe the improvement activities that were completed in association with the response actions to reasonably prevent future disposal at the site.

4.1 EARTHEN BERM REPAIR

Approximately a 1.7 miles stretch of the existing earthen berm along Montana Avenue and the Site Monitor access road was repaired. There were 11 commonly used access points that were identified that required repairs. These areas of the berm were repaired using a backhoe, medium-size bobcat, shovels and hand tools. The improvements to the earthen berm were conducted to reduce access to the site and surrounding areas. Photographs of the berm repair activities are described in Appendix C.

4.2 SURVEYING AND FENCE INSTALLATION

Prior to the installation of the fence along Montana Avenue, a Texas-Licensed land surveyor was retained to identify and stake the location of the east-west property line along Montana Avenue. Once the property line was established, a 4-strand barbwire fence was installed along Montana Road and the Site Monitor access Road. The fence was constructed on Fort Bliss property originating along Montana Road west of the Rubble Dump Site where the fence for the El Paso International Airport terminated. The fence was extended along Montana Road to the Site Monitor access road where it turned north. The fence was then extended to the Site Monitor parking lot where nearby security personnel are always on duty. Brace posts were incorporated into the fence at approximate 300-foot intervals, and no trespassing signs were installed along the fence at 100-foot intervals. The location of the fence is shown in Figure 5. One gate was installed at the power line easement road in the event that access was required by the local power company. The gate was secured with a lock and chain, and Fort Bliss controls access to the gate keys. Photographs of the fence are provided in Appendix C (photograph 3 and 4).

5.0 CONCLUSIONS

Based on the data and information presented in this report, the following conclusions are provided for the Rubble Dump Site.

- Approximately six cubic yards of hydrocarbon-impacted soil were excavated and transported to Camino Real Landfill in New Mexico for disposal, and approximately four cubic yards of ACM were removed and transported to Otero County Landfill in New Mexico for disposal.
- Approximately 1,638 cubic yards of non-hazardous construction/demolition debris were removed and transported to Camino Real Landfill in New Mexico, and the Clint and Fort Bliss Landfills in Texas for disposal.
- The horizontal and vertical extent of impacted soils have been delineated to concentrations either below the laboratory PQLs (method detection limits) or the critical Tier 1 PCLs for organic and inorganic constituents.
- An ecological evaluation was performed, and the results indicate that the site does not pose unacceptable risks to ecological receptors.
- Concentration of constituents remaining in the soils are below the Tier 1 Residential PCLs. Therefore, the Rubble Dump Site is in compliance with a Remedy Standard A, Tier 1 Closure and no further action is required.
- A fence was installed along Montana Road and the Site Monitor access road to control access and prevent future dumping.
- This Response Action Completion Report along with the associated appendices comply with the requirements of the Affected Property Assessment Report, 30 TAC §350.51 through §350.55.

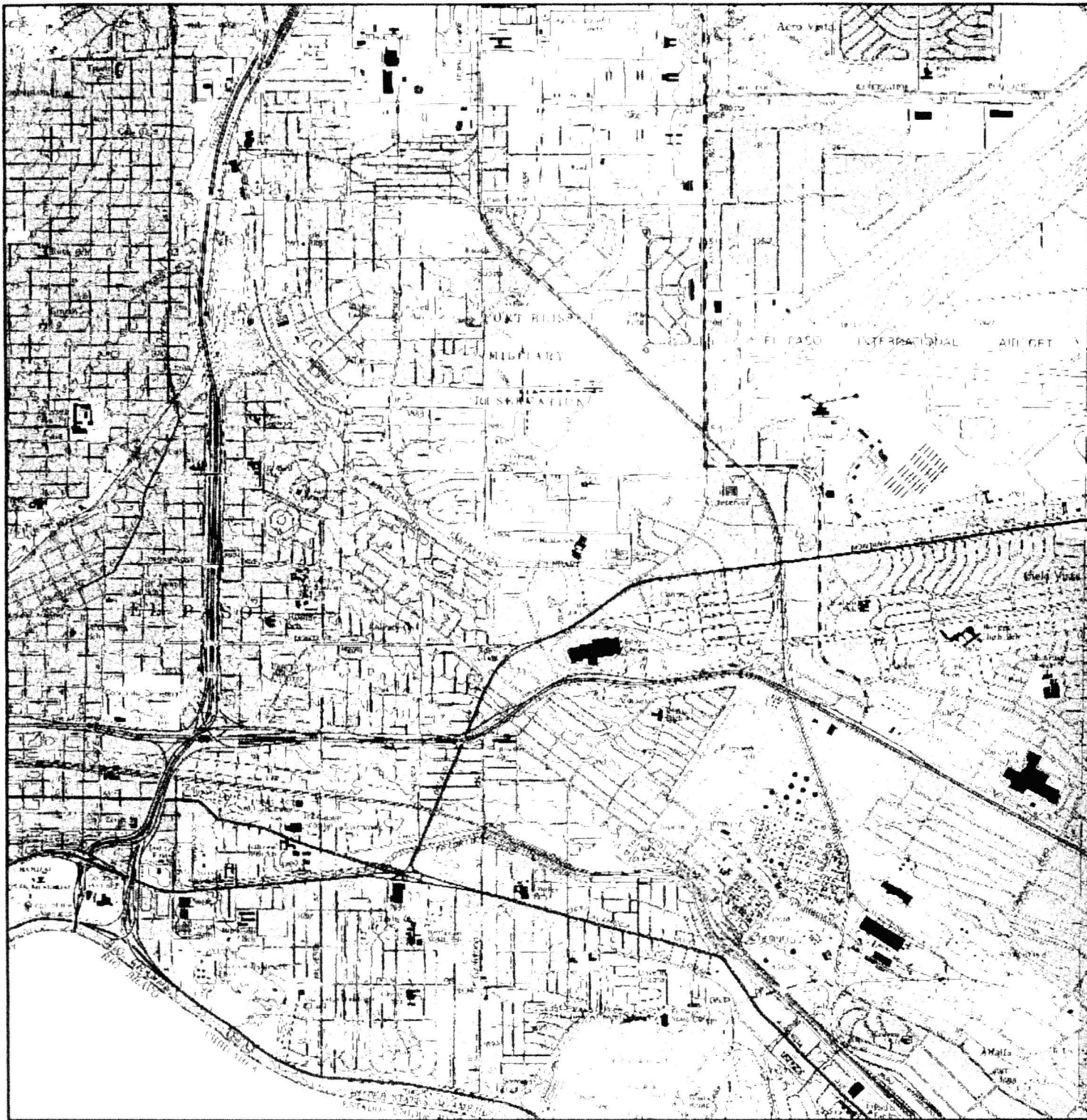
6.0 REFERENCES

Encon International, Inc. (Encon). 2000. *Environmental Technical Report, Fort Bliss Rubble Dump and Spill Site Clean up near Site Monitor – SWMU-16*. 14 June 2000.

Golder (Golder Associates). 1997. *Final Report, Preliminary Site Investigations*. July 1997.

Golder. 1999. *Final Report, Site Characterization Rubble Dump/Spill Site, Fort Bliss, Texas*. January 1999.

TNRCC (Texas Natural Resource Conservation Commission). 1999. *Title 30, Texas Administrative Code §350, Risk Reduction Program Rule*. 23 September 1999.



LEGEND



SITE LOCATION

REF: 7.5 MINUTE SERIES (TOPOGRAPHIC MAP)
FORT BLISS SE QUADRANGLE
SCALE: 1:24,000

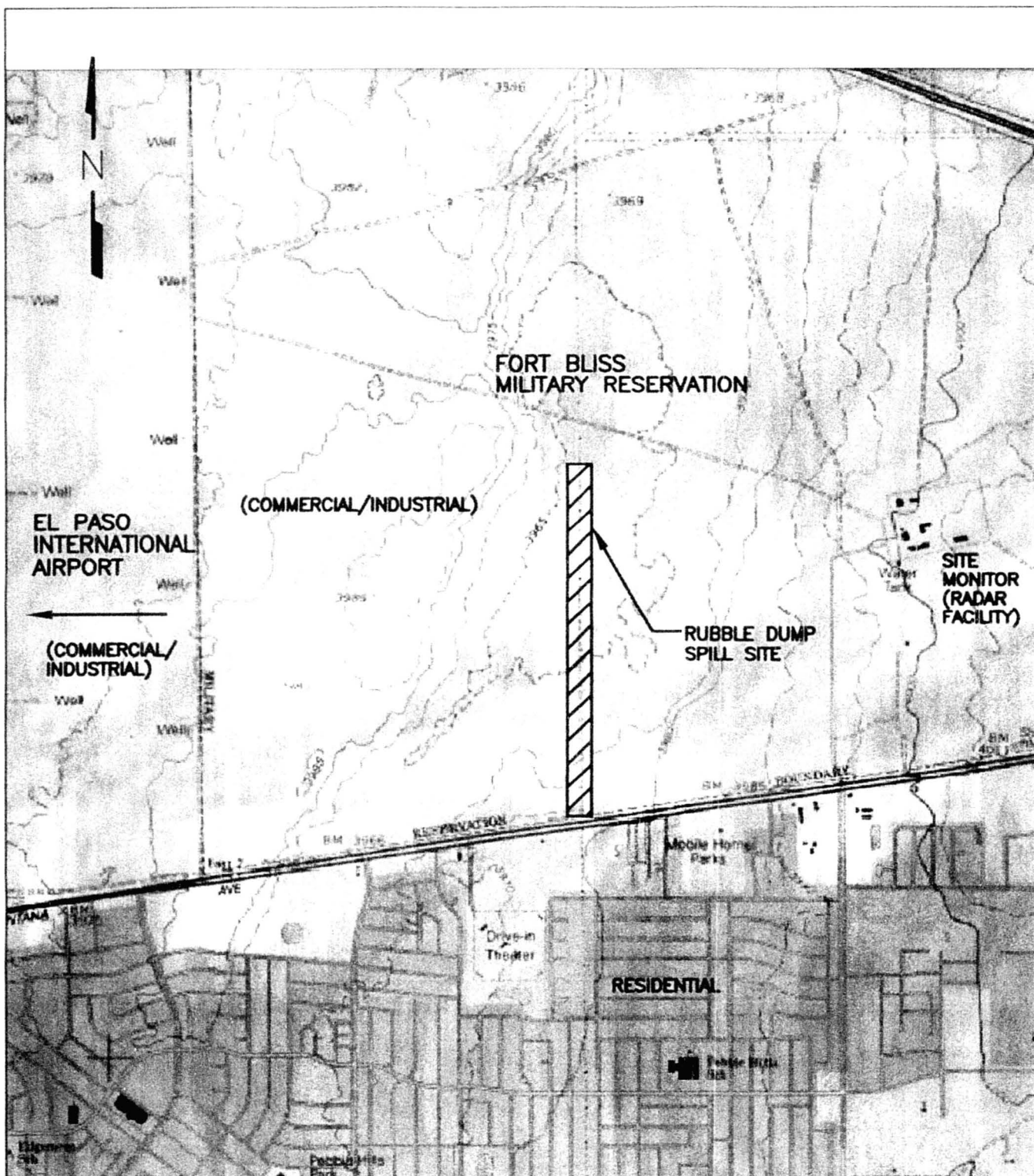
SOURCE: PRELIMINARY SITE INVESTIGATION REPORT, GOLDER ASSOC. INC.
FOR DBS JV/BOHANNAN-HUSTON, INC. (JULY, 1997)



WESTON
MANAGERS DESIGNERS/CONSULTANTS

FIGURE 1
SITE LOCATION
MAP
RUBBLE DUMP SPILL SITE
(SWMU - 16)
FORT BLISS, TEXAS

DATE MARCH 01	PROJECT NO. 12371002003	SCALE NOT TO SCALE
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SCALE 1:24,000



LEGEND



SITE LOCATION

WESTON
MANAGERS DESIGNERS/CONSULTANTS

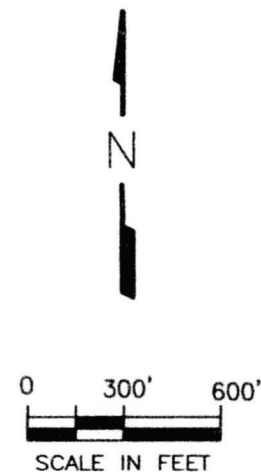
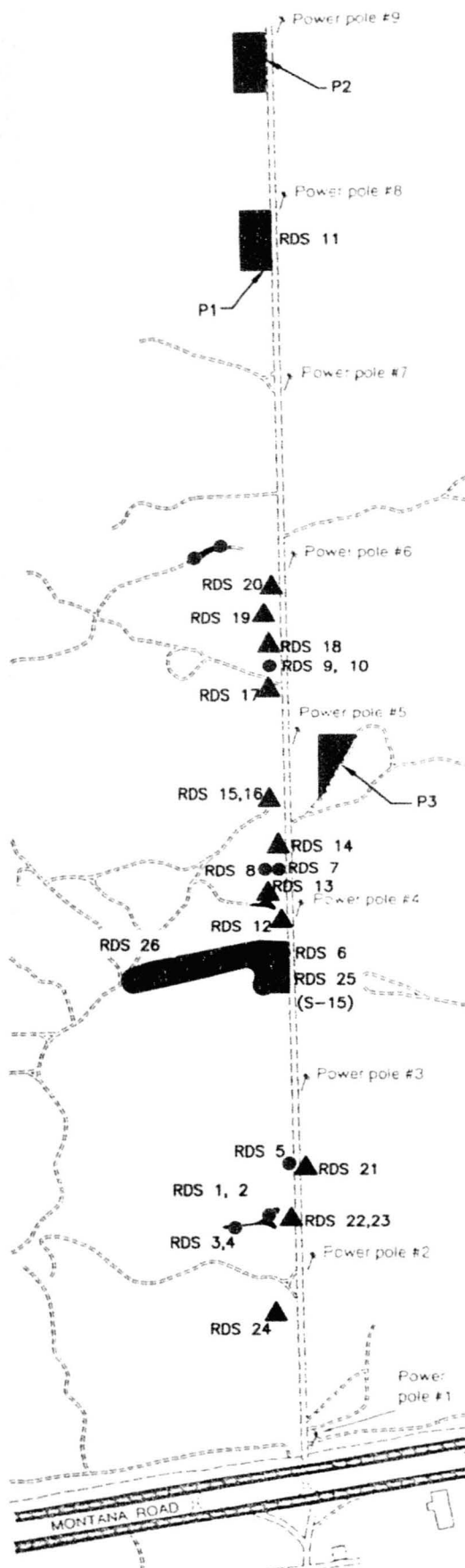
**FIGURE 2
LAND USE
MAP**

**RUBBLE DUMP SPILL SITE
(SWMU -16)
FORT BLISS, TEXAS**

DATE FEB 01	PROJECT NO. 12371002003	SCALE AS SHOWN
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REF: 7.5 MINUTE SERIES (TOPOGRAPHIC MAP)
FORT BLISS SE QUADRANGLE
SCALE: 1:24,000

SOURCE: PRELIMINARY SITE INVESTIGATION REPORT, GOLDER ASSOC. INC
FOR DBS JV/BOHANNAN-HUSTON INC (JULY 1997)



NOTES:
1) RDS-SERIES SAMPLES COLLECTED DURING THE PRELIMINARY SITE INVESTIGATION (1995).

LEGEND

ELEVATED TPH/SVOC CONCENTRATIONS



CONSTRUCTION DEBRIS SAMPLE



SURFACE SOIL SAMPLE

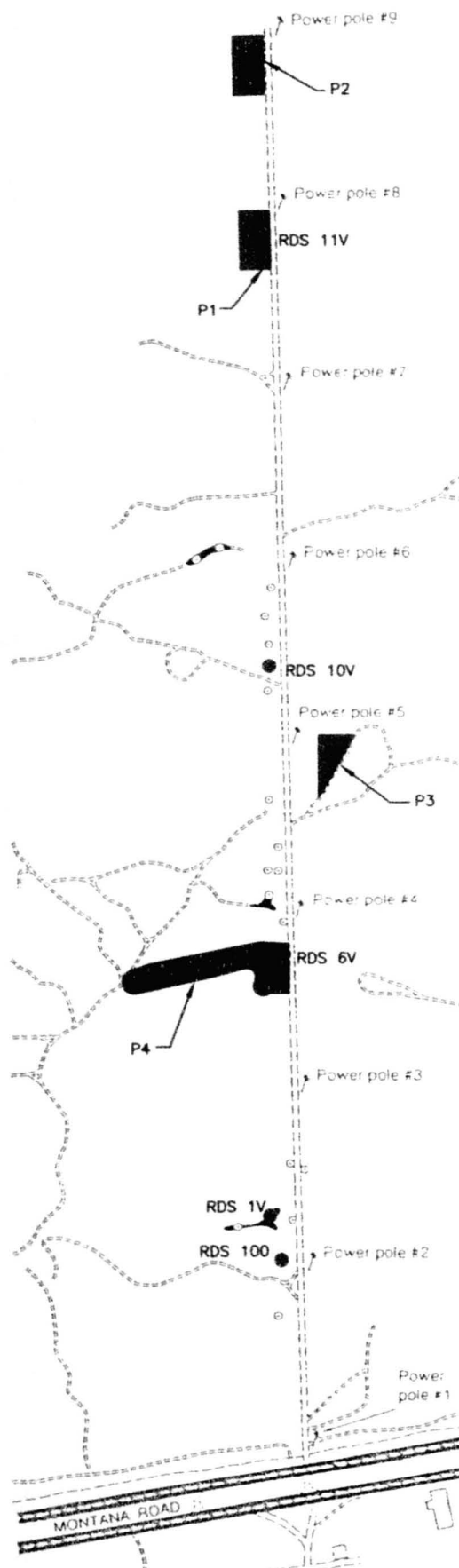


SURFACE SOIL EXCAVATION AREAS (P1, P2, P3, P4) (SIZE DOES NOT REPRESENT ACTUAL SIZE EXCAVATED)

WESTON
ENGINEERS/CONSULTANTS

FIGURE 3
SAMPLE LOCATION
MAP
RUBBLE DUMP SPILL SITE
(SWMU 16)
FORT BLISS, TEXAS

DATE FEB 01	PROJECT NO. 12371002003	SCALE AS SHOWN
----------------	----------------------------	-------------------



NOTE:

- 1) VERIFICATION SAMPLE FORT BLISS #1 WAS A COMPOSITE SOIL SAMPLE COLLECTED FROM EXCAVATED AREAS P1, P2, P3, P4 UPON COMPLETION OF THE EXCAVATION ACTIVITIES.
- 2) SURFACE SOIL SAMPLE RDS - IV, -6V, -10V, -11V, 100 WERE FINAL VERIFICATION SAMPLES COLLECTED ON NOVEMBER 6, 2000 AND JANUARY 3, 2001.

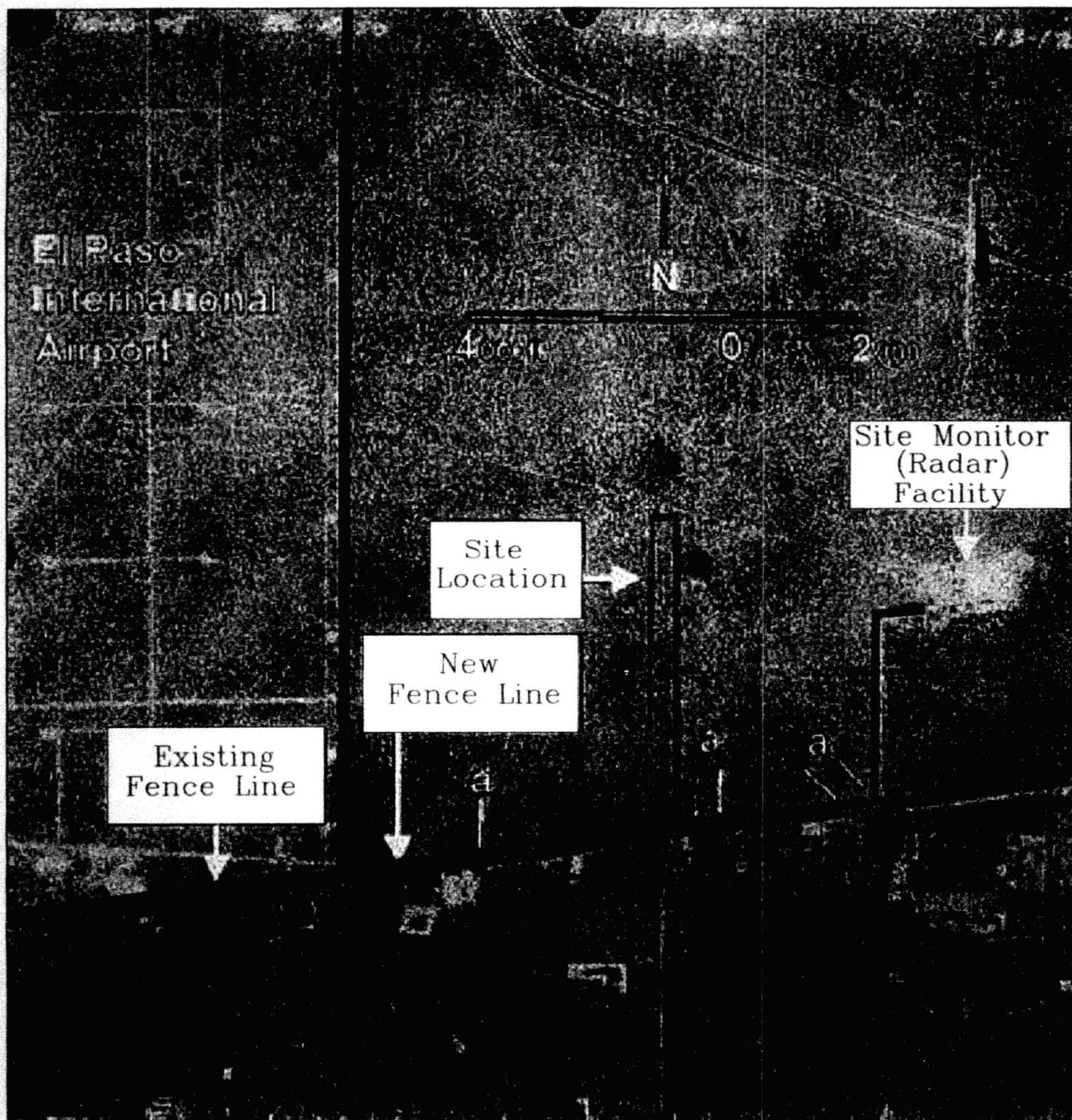
LEGEND

- FINAL VERIFICATION SOIL SAMPLE
- SURFACE SOIL EXCAVATION AREAS (P1, P2, P3, P4) (SIZE DOES NOT REPRESENT ACTUAL SIZE EXCAVATED)

WESTON
DESIGNERS/CONSULTANTS

FIGURE 4
SURFACE SOIL EXCAVATION
AREAS AND VERIFICATION
SAMPLE LOCATIONS
MAP
RUBBLE DUMP SPILL SITE
(SWMU 16)
FORT BLISS, TEXAS

DATE FEB 01	PROJECT NO. 12371002003	SCALE AS SHOWN
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NOTE:

Aerial photograph of the project site and adjoining El Paso International airport property (Cooper Aerial Survey, 1995). Fence line for airport is illustrated in blue. The newly installed fence line for the rubble dump/spill site is outlined in green (a- Indicates typical site access points that were blocked by repairing the earthen berm.

SOURCE: ENVIRONMENTAL TECHNICAL REPORT, ENCON INTERNATIONAL, INC. (JUNE 14, 2000)

WESTON
MANAGERS DESIGNERS/CONSULTANTS

FIGURE 5
AERIAL PHOTOGRAPH
(FENCE INSTALLATION)
RUBBLE DUMP SPILL SITE
(SWMU -16)
FORT BLISS, TEXAS

DATE	PROJECT NO.	SCALE
FEB 01	12371002003	AS SHOWN

H:\DWG\FORT BLISS\0131011030.TMG 01/31/01

Table 1
Summary of Detected Concentrations in Soil
Rubble Dump Spill Site (SWMU 16)
Fort Bliss, El Paso, Texas

Analyte	Residential Tier 1 PCLs		Sample I.D.					
	Tot Soil Comb	GW Soil	RDS-1	RDS-2	RDS-3	RDS-4	RDS-5	RDS-6
			(0-1)	(0-1)	(0-1)	(0-1)	(0-1)	(0-1)
			11/4/95	11/4/95	11/4/95	11/4/95	11/4/95	11/4/95
VOCs (mg/kg) - 8260								
Naphthalene	120	16	0.005U	0.005U	0.005U	0.005U	0.005U	0.005U
Methylene Chloride	260	0.0065	0.005U	0.005U	0.005U	0.005U	0.005U	0.005U
Acetone	3,400	2.4	NA	NA	NA	NA	NA	NA
2-Butanone	9,500	15	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone	-	-	NA	NA	NA	NA	NA	NA
2-Hexanone	4,900	-	NA	NA	NA	NA	NA	NA
Toluene	2,600	4.1	0.005U	0.005U	0.005U	0.005U	0.005U	0.005U
VOCs (mg/kg) - 8021 B								
Benzene	21.0	0.013	---	---	---	---	---	---
Toluene	2,600	4.1	---	---	---	---	---	---
Ethylbenzene	4,000	3.8	---	---	---	---	---	---
Total Xylenes	3,300	61	---	---	---	---	---	---
SVOCs (mg/kg) - 8270								
Naphthalene	120	16	0.340U	0.350U	0.340U	0.340U	ND	0.095J
Phenanthrene	1,700	210	0.340U	0.350U	0.340U	0.340U	0.330U	0.130J
Fluoranthene	2,300	960	0.340U	0.350U	0.340U	0.340U	0.330U	0.071J
Pyrene	1,700	560	0.340U	0.350U	0.340U	0.340U	0.330U	0.410
Benzo(a)anthracene	5.6	8.9	0.340U	0.350U	0.340U	0.340U	0.330U	0.070J
bis (2- Ethylhexyl) phthalate	43	82	0.340U	0.350U	0.340U	0.340U	0.560	1.900
Chrysene	560	770	0.340U	0.350U	0.340U	0.340U	0.330U	0.130J
Di-n-octyl phthalate	1,300	810,000	0.340U	0.350U	0.340U	0.340U	0.330U	0.140 J
Benzo(b)fluoranthene	6	30	0.340U	0.350U	0.340U	0.340U	0.330U	0.120J
Benzo(g,h,i)perylene	1,800	23,000	0.340U	0.350U	0.340U	0.340U	0.330U	0.110J
2-Methylnaphthalene	2,500	85	0.340U	0.350U	0.340U	0.340U	0.330U	0.085J
Acenaphthene	3,000	120	0.340U	0.350U	0.340U	0.340U	0.330U	0.340U
Fluorene	2,300	150	0.340U	0.350U	0.340U	0.340U	0.330U	0.340U
Anthracene	18,000	3,400	0.340U	0.350U	0.340U	0.340U	0.330U	0.340U
Benzo(k)fluoranthene	57	310	0.340U	0.350U	0.340U	0.340U	0.330U	0.340U
Benzo(a)pyrene	0.56	3.8	0.340U	0.350U	0.340U	0.340U	0.330U	0.340U
Indeno (1,2,3-cd) pyrene	5.7	87	0.340U	0.350U	0.340U	0.340U	0.330U	0.340U
Dibenz (a,h) anthracene	0.55	7.6	0.340U	0.350U	0.340U	0.340U	0.330U	0.340U
Acenaphthylene	3,800	220	0.340U	0.350U	0.340U	0.340U	0.330U	0.340U
Butylbenzylphthalate	5,700	1,300	0.340U	0.350U	0.340U	0.340U	0.330U	0.340U
Metals (mg/kg) - 6010/7000 Series								
Arsenic	24	13	---	---	---	---	---	---
Barium	2,800	220	---	---	---	---	---	---
Cadmium	43	0.75	---	---	---	---	---	---
Chromium	23,000	1,200	---	---	---	---	---	---
Lead	500	1.5	---	---	---	---	---	---
Mercury	6	1.0	---	---	---	---	---	---
Selenium	310	1.1	---	---	---	---	---	---
Silver	95	0.240	---	---	---	---	---	---
Total Petroleum Hydrocarbons (mg/kg)								
TPH 418.1	-	-	2,420	29.1	34.9	31.6	46.6	< 25.0
TPH 1005	-	-						
C ₆ - C ₁₀	1,600	20	---	---	---	---	---	---
> C ₁₀ - C ₂₈	1,600	20	---	---	---	---	---	---
C ₆ - C ₂₈	1,600	20	---	---	---	---	---	---
Oil & Grease	-	-	3,100	40.2	45.9	27.8	61.7	< 25.2

¹ Sample RDS-29 was a trip blank.

² Sample S-2 is a duplicate of sample S-1.

³ Sample S-8 is a duplicate of sample S-7.

⁴ Soil sample was analyzed for SVOCs by EPA Method 8310.

J = Indicates an estimated value.

E = Concentration exceeds the calibration range of the GC MS.

B = Analyte detected in method blank.

Bold = Detected concentrations exceed the critical Tier 1 PCL for residential land use at a 30 acre source area.

232[<0.015] = Total concentration (mg/kg) / SPLP concentration (mg/L)

Table 1
Summary of Detected Concentrations in Soil
Rubble Dump Spill Site (SWMU 16)
Fort Bliss, El Paso, Texas

Analyte	Residential Tier 1 PCLs		Sample I.D.					
	Tot Soil Comb	GW Soil	RDS-7	RDS-8	RDS-9	RDS-10	RDS-11	RDS-25
			(0-1)	(0-1)	(0-1)	(0-1)	(0-1)	(0-1)
			11/4/95	11/4/95	11/4/95	11/4/95	11/4/95	11/10/95
VOCs (mg/kg) - 8260								
Naphthalene	120	16	0.005U	0.005U	0.005U	0.005U	0.005U	0.007U
Methylene Chloride	260	0.0065	0.005U	0.005U	0.005U	0.005U	0.005U	0.005U
Acetone	3,400	2.4	NA	NA	NA	NA	NA	NA
2-Butanone	9,500	15	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone	-	-	NA	NA	NA	NA	NA	NA
2-Hexanone	4,900	-	NA	NA	NA	NA	NA	NA
Toluene	2,600	4.1	0.005U	0.005U	0.005U	0.005U	0.005U	0.005U
VOCs (mg/kg) - 8021 B								
Benzene	21.0	0.013	---	---	---	---	---	---
Toluene	2,600	4.1	---	---	---	---	---	---
Ethylbenzene	4,000	3.8	---	---	---	---	---	---
Total Xylenes	3,300	61	---	---	---	---	---	---
SVOCs (mg/kg) - 8270								
Naphthalene	120	16	0.340U	0.340U	0.330U	9.900E	17.000U	0.340U
Phenanthrene	1,700	210	0.340U	0.340U	0.330U	75.000E	8.600J	0.340U
Fluoranthene	2,300	960	0.340U	0.340U	0.330U	16.000E	17.000U	0.340U
Pyrene	1,700	560	0.340U	0.340U	0.330U	28.000	17.000U	0.340U
Benzo(a)anthracene	5.6	8.9	0.340U	0.340U	0.330U	8.800E	17.000U	0.340U
bis (2-Ethylhexyl) phthalate	43	82	0.075 J	0.340U	0.330U	0.260J	17.000U	2.600
Chrysene	560	770	0.340U	0.340U	0.330U	8.700E	17.000U	0.340U
Di-n-octyl phthalate	1,300	810,000	0.340U	0.340U	0.330U	0.330U	17.000U	0.340U
Benzo(b)fluoranthene	6	30	0.340U	0.340U	0.330U	8.400E	17.000U	0.340U
Benzo(g,h,i)perylene	1,800	23,000	0.340U	0.340U	0.330U	2.500	17.000U	0.340U
2-Methylnaphthalene	2,500	85	0.340U	0.340U	0.330U	21.000E	17.000U	0.340U
Acenaphthene	3,000	120	0.340U	0.340U	0.330U	5.300	5.400J	0.340U
Fluorene	2,300	150	0.340U	0.340U	0.330U	2.600	8.000J	0.340U
Anthracene	18,000	3,400	0.340U	0.340U	0.330U	13.000E	6.600J	0.340U
Benzo(k)fluoranthene	57	310	0.340U	0.340U	0.330U	1.500	17.000U	0.340U
Benzo(a)pyrene	0.56	3.8	0.340U	0.340U	0.330U	7.500E	17.000U	0.340U
Indeno (1,2,3-cd) pyrene	5.7	87	0.340U	0.340U	0.330U	2.000	17.000U	0.340U
Dibenz (a,h) anthracene	0.55	7.6	0.340U	0.340U	0.330U	1.300	17.000U	0.340U
Acenaphthylene	3,800	220	0.340U	0.340U	0.330U	0.330U	14.000J	0.340U
Butylbenzylphthalate	5,700	1,300	0.340U	0.340U	0.330U	0.330U	17.000U	0.340U
Metals (mg/kg) - 6010/7000 Series								
Arsenic	24	13	---	---	---	---	---	---
Barium	2,800	220	---	---	---	---	---	---
Cadmium	43	0.75	---	---	---	---	---	---
Chromium	23,000	1,200	---	---	---	---	---	---
Lead	500	1.5	---	---	---	---	---	---
Mercury	6	1.0	---	---	---	---	---	---
Selenium	310	1.1	---	---	---	---	---	---
Silver	95	0.240	---	---	---	---	---	---
Total Petroleum Hydrocarbons (mg/kg)								
TPH 418.1	-	-	556	142	< 25.0	94.9	2,030	3,700
TPH 1005	-	-	---	---	---	---	---	---
C ₆ - C ₁₀	1,600	20	---	---	---	---	---	---
> C ₁₀ - C ₂₈	1,600	20	---	---	---	---	---	---
C ₆ - C ₂₈	1,600	20	---	---	---	---	---	---
Oil & Grease	-	-	578	145	< 25.0	115	2,030	7,690

¹ Sample RDS-29 was a trip blank.

² Sample S-2 is a duplicate of sample S-1.

³ Sample S-8 is a duplicate of sample S-7.

* Soil sample was analyzed for SVOCs by EPA Method 8310.

J = Indicates an estimated value.

E = Concentration exceeds the calibration range of the GC MS

B = Analyte detected in method blank.

Bold = Detected concentrations exceed the critical Tier 1 PCL f for residential land use at a 30 acre source area

232/[<0.015] = Total concentration (mg/kg) / SPLP concentrati

Table 1
Summary of Detected Concentrations in Soil
Rubble Dump Spill Site (SWMU 16)
Fort Bliss, El Paso, Texas

Analyte	Residential Tier 1 PCLs		Sample I.D.						
	Tot Soil Comb	GW Soil	RDS-26	RDS-27	RDS-28	RDS-29 ¹	S-1	S-2 ²	S-3
			(0-1)	(0-1)	(0-1)	(0-1)	(0-2)	(0-2)	(4-6)
			11/10/95	11/10/95	11/10/95	11/10/95	8/97	8/97	8/97
VOCs (mg/kg) - 8260									
Naphthalene	120	16	0.005U	0.005U	0.005U	0.005U	0.005 U	0.005 U	0.0051 U
Methylene Chloride	260	0.0065	0.005U	0.005U	0.005U	0.230 E	0.005 U	0.009 B	0.0054 B
Acetone	3,400	2.4	NA	NA	NA	NA	0.020 U	0.020 U	0.020 U
2-Butanone	9,500	15	NA	NA	NA	NA	0.020 U	0.020 U	0.020 U
4-Methyl-2-pentanone	-	-	NA	NA	NA	NA	0.020 U	0.020 U	0.020 U
2-Hexanone	4,900	-	NA	NA	NA	NA	0.020 U	0.020 U	0.020 U
Toluene	2,600	4.1	0.005U	0.005U	0.005U	0.005U	0.005 U	0.005 U	0.0051 U
VOCs (mg/kg) - 8021 B									
Benzene	21.0	0.013	---	---	---	---	---	---	---
Toluene	2,600	4.1	---	---	---	---	---	---	---
Ethylbenzene	4,000	3.8	---	---	---	---	---	---	---
Total Xylenes	3,300	61	---	---	---	---	---	---	---
SVOCs (mg/kg) - 8270									
Naphthalene	120	16	0.340U	0.330U	0.340U	NA	340 U	340 U	6.70 U
Phenanthrene	1,700	210	0.340U	0.330U	0.340U	NA	340 U	340 U	6.70 U
Fluoranthene	2,300	960	0.340U	0.330U	0.340U	NA	340 U	340 U	6.70 U
Pyrene	1,700	560	0.340U	0.330U	0.340U	NA	340 U	340 U	6.70 U
Benzo(a)anthracene	5.6	8.9	0.340U	0.330U	0.340U	NA	340 U	340 U	6.70 U
bis (2-Ethylhexyl) phthalate	43	82	0.770	0.078J	0.160J	NA	340 U	340 U	6.70 U
Chrysene	560	770	0.340U	0.330U	0.340U	NA	340 U	340 U	6.70 U
Di-n-octyl phthalate	1,300	810,000	0.340U	0.330U	0.340U	NA	340 U	340 U	6.70 U
Benzo(b)fluoranthene	6	30	0.340U	0.330U	0.340U	NA	340 U	340 U	6.70 U
Benzo(g,h,i)perylene	1,800	23,000	0.340U	0.330U	0.340U	NA	340 U	340 U	6.70 U
2-Methylnaphthalene	2,500	85	0.340U	0.330U	0.340U	NA	340 U	340 U	6.70 U
Acenaphthene	3,000	120	0.340U	0.330U	0.340U	NA	340 U	340 U	6.70 U
Fluorene	2,300	150	0.340U	0.330U	0.340U	NA	340 U	340 U	6.70 U
Anthracene	18,000	3,400	0.340U	0.330U	0.340U	NA	340 U	340 U	6.70 U
Benzo(k)fluoranthene	57	310	0.340U	0.330U	0.340U	NA	340 U	340 U	6.70 U
Benzo(a)pyrene	0.56	3.8	0.340U	0.330U	0.340U	NA	340 U	340 U	6.70 U
Indeno (1,2,3-cd) pyrene	5.7	87	0.340U	0.330U	0.340U	NA	340 U	340 U	6.70 U
Dibenz (a,h) anthracene	0.55	7.6	0.340U	0.330U	0.340U	NA	340 U	340 U	6.70 U
Acenaphthylene	3,800	220	0.340U	0.330U	0.340U	NA	340 U	340 U	6.70 U
Butylbenzylphthalate	5,700	1,300	1700.000	0.330U	0.340U	NA	340 U	340 U	6.70 U
Metals (mg/kg) - 6010/7000 Series									
Arsenic	24	13	---	---	---	---	---	---	---
Barium	2,800	220	---	---	---	---	---	---	---
Cadmium	43	0.75	---	---	---	---	---	---	---
Chromium	23,000	1,200	---	---	---	---	---	---	---
Lead	500	1.5	---	---	---	---	---	---	---
Mercury	6	1.0	---	---	---	---	---	---	---
Selenium	310	1.1	---	---	---	---	---	---	---
Silver	95	0.240	---	---	---	---	---	---	---
Total Petroleum Hydrocarbons (mg/kg)									
TPH 418.1	-	-	775	64.7	42.7	---	---	---	---
TPH 1005	-	-	---	---	---	---	---	---	---
C ₆ - C ₁₀	1,600	20	---	---	---	---	---	---	---
> C ₁₀ - C ₂₈	1,600	20	---	---	---	---	---	---	---
C ₆ - C ₂₈	1,600	20	---	---	---	---	---	---	---
Oil & Grease	-	-	796	70.6	49.7	---	---	---	---

¹ Sample RDS-29 was a trip blank.

² Sample S-2 is a duplicate of sample S-1.

³ Sample S-8 is a duplicate of sample S-7.

Soil sample was analyzed for SVOCs by EPA Method 8310.

J = Indicates an estimated value.

E = Concentration exceeds the calibration range of the GC MS.

B = Analyte detected in method blank.

Bold = Detected concentrations exceed the critical Tier 1 PCL f for residential land use at a 30 acre source area.

232/[<0.015] = Total concentration (mg/kg) / SPLP concentrati

Table 1
Summary of Detected Concentrations in Soil
Rubble Dump Spill Site (SWMU 16)
Fort Bliss, El Paso, Texas

Analyte	Residential Tier 1 PCLs		Sample I.D.								
	Tot Soil Comb	GW Soil	S-4	S-5	S-6	S-7	S-8 ³	S-9	S-10	S-11	S-12
			surface	(0-2)	(0-2)	(0-2)	(0-2)	(0-2)	(2-4)	(0-2)	(0-2)
			8/97	8/97	8/97	8/97	8/97	8/97	8/97	8/97	8/97
VOCs (mg/kg) - 8260											
Naphthalene	120	16	0.006 U	0.006 U	0.006 U	0.0053 U	0.0056 U	0.0052 U	0.0052 U	0.0064 U	0.0061 U
Methylene Chloride	260	0.0065	0.016 B	0.006 U	0.015 B	0.012 B	0.0056 U	0.011 B	0.0074 B	0.012 B	0.0066 B
Acetone	3,400	2.4	0.024 U	0.024 U	0.024 U	0.021 U	0.022 U	0.230 E	0.021 U	0.026 U	0.025 U
2-Butanone	9,500	15	0.024 U	0.024 U	0.024 U	0.021 U	0.022 U	0.071	0.021 U	0.026 U	0.025 U
4-Methyl-2-pentanone	-	-	0.024 U	0.024 U	0.024 U	0.021 U	0.022 U	0.120	0.013	0.026 U	0.025 U
2-Hexanone	4,900	-	0.024 U	0.024 U	0.024 U	0.021 U	0.022 U	0.012	0.021 U	0.026 U	0.025 U
Toluene	2,600	4.1	0.006 U	0.006 U	0.0037 J	0.0053 U	0.0056 U	0.0052 U	0.0052 U	0.0064 U	0.0061 U
VOCs (mg/kg) - 8021 B											
Benzene	21.0	0.013	---	---	---	---	---	---	---	---	---
Toluene	2,600	4.1	---	---	---	---	---	---	---	---	---
Ethylbenzene	4,000	3.8	---	---	---	---	---	---	---	---	---
Total Xylenes	3,300	61	---	---	---	---	---	---	---	---	---
SVOCs (mg/kg) - 8270											
Naphthalene	120	16	40.0 U	4.00 U	40.0 U	7.10 U	3.70 U	35.0 U	3.40 U	85.0 U	4.10 U
Phenanthrene	1,700	210	40.0 U	4.00 U	40.0 U	7.10 U	3.70 U	35.0 U	3.40 U	85.0 U	4.10 U
Fluoranthene	2,300	960	40.0 U	4.00 U	40.0 U	7.10 U	3.70 U	35.0 U	3.40 U	85.0 U	4.10 U
Pyrene	1,700	560	40.0 U	4.00 U	40.0 U	7.10 U	3.70 U	35.0 U	3.40 U	85.0 U	4.10 U
Benzo(a)anthracene	5.6	8.9	40.0 U	4.00 U	40.0 U	7.10 U	3.70 U	35.0 U	3.40 U	85.0 U	4.10 U
bis (2-Ethylhexyl) phthalate	43	82	40.0 U	4.00 U	40.0 U	7.10 U	3.70 U	35.0 U	3.40 U	85.0 U	4.10 U
Chrysene	560	770	40.0 U	4.00 U	40.0 U	7.10 U	3.70 U	35.0 U	3.40 U	85.0 U	4.10 U
Di-n-octyl phthalate	1,300	810,000	40.0 U	4.00 U	40.0 U	7.10 U	3.70 U	35.0 U	3.40 U	85.0 U	4.10 U
Benzo(b)fluoranthene	6	30	40.0 U	4.00 U	40.0 U	7.10 U	3.70 U	35.0 U	3.40 U	85.0 U	4.10 U
Benzo(g,h,i)perylene	1,800	23,000	40.0 U	4.00 U	40.0 U	7.10 U	3.70 U	35.0 U	3.40 U	85.0 U	4.10 U
7-Methylnaphthalene	2,500	85	40.0 U	4.00 U	40.0 U	7.10 U	3.70 U	35.0 U	3.40 U	85.0 U	4.10 U
Acenaphthene	3,000	120	40.0 U	4.00 U	40.0 U	7.10 U	3.70 U	35.0 U	3.40 U	85.0 U	4.10 U
Fluorene	2,300	150	40.0 U	4.00 U	40.0 U	7.10 U	3.70 U	35.0 U	3.40 U	85.0 U	4.10 U
Anthracene	18,000	3,400	40.0 U	4.00 U	40.0 U	7.10 U	3.70 U	35.0 U	3.40 U	85.0 U	4.10 U
Benzo(k)fluoranthene	57	310	40.0 U	4.00 U	40.0 U	7.10 U	3.70 U	35.0 U	3.40 U	85.0 U	4.10 U
Benzo(a)pyrene	0.56	3.8	40.0 U	4.00 U	40.0 U	7.10 U	3.70 U	35.0 U	3.40 U	85.0 U	4.10 U
Indeno (1,2,3-cd) pyrene	5.7	87	40.0 U	4.00 U	40.0 U	7.10 U	3.70 U	35.0 U	3.40 U	85.0 U	4.10 U
Dibenz (a,h) anthracene	0.55	7.6	40.0 U	4.00 U	40.0 U	7.10 U	3.70 U	35.0 U	3.40 U	85.0 U	4.10 U
Acenaphthylene	3,800	220	40.0 U	4.00 U	40.0 U	7.10 U	3.70 U	35.0 U	3.40 U	85.0 U	4.10 U
Butylbenzylphthalate	5,700	1,300	40.0 U	4.00 U	40.0 U	7.10 U	3.70 U	35.0 U	3.40 U	85.0 U	4.10 U
Metals (mg/kg) - 6010/7000 Series											
Arsenic	24	13	---	---	---	---	---	---	---	---	---
Barium	2,800	220	---	---	---	---	---	---	---	---	---
Cadmium	43	0.75	---	---	---	---	---	---	---	---	---
Chromium	23,000	1,200	---	---	---	---	---	---	---	---	---
Lead	500	1.5	---	---	---	---	---	---	---	---	---
Mercury	6	1.0	---	---	---	---	---	---	---	---	---
Selenium	310	1.1	---	---	---	---	---	---	---	---	---
Silver	95	0.240	---	---	---	---	---	---	---	---	---
Total Petroleum Hydrocarbons (mg/kg)											
TPH 418.1	-	-	---	---	---	---	---	---	---	---	---
TPH 1005	-	-	---	---	---	---	---	---	---	---	---
C ₆ - C ₁₀	1,600	20	---	---	---	---	---	---	---	---	---
> C ₁₀ - C ₂₈	1,600	20	---	---	---	---	---	---	---	---	---
C ₆ - C ₂₈	1,600	20	---	---	---	---	---	---	---	---	---
Oil & Grease	-	-	---	---	---	---	---	---	---	---	---

¹ Sample RDS-29 was a trip blank.

² Sample S-2 is a duplicate of sample S-1.

³ Sample S-8 is a duplicate of sample S-7.

Soil sample was analyzed for SVOCs by EPA Method 8310.

J = Indicates an estimated value.

E = Concentration exceeds the calibration range of the GC MS.

B = Analyte detected in method blank.

Bold = Detected concentrations exceed the critical Tier 1 PCL f for residential land use at a 30 acre source area.

232 / [< 0.015] = Total concentration (mg/kg) / SPLP concentration

Table 1
Summary of Detected Concentrations in Soil
Rubble Dump Spill Site (SWMU 16)
Fort Bliss, El Paso, Texas

Analyte	Residential Tier 1		Sample I.D.						
	PCLs		S-13 (0-1) 8/97	S-14 (2-4) 8/97	S-15 (0-1) 8/97	S-16 4 8/97	S-17 (0-1) 8/97	S-18 (4-6) 8/97	Trip Blank (0-1) 8/97
	Tot Soil Comb	GW Soil							
VOCs (mg/kg) - 8260									
Naphthalene	120	16	0.0053 U	0.0054 U	0.0054 U	0.0055 U	0.0052 U	0.0055 U	0.005 U
Methylene Chloride	260	0.0065	0.0097 B	0.0054 U	0.019 B	0.0055 U	0.019 B	0.0056 B	0.005 U
Acetone	3,400	2.4	0.054	0.022 U	0.022 U	0.022 U	0.038	0.022 U	0.020 U
2-Butanone	9,500	15	0.021 U	0.022 U	0.022 U	0.022 U	0.012	0.022 U	0.020 U
4-Methyl-2-pentanone	-	-	0.021 U	0.022 U	0.022 U	0.022 U	0.021 U	0.022 U	0.020 U
2-Hexanone	4,900	-	0.021 U	0.022 U	0.022 U	0.022 U	0.021 U	0.022 U	0.020 U
Toluene	2,600	4.1	0.0024 J	0.0054 U	0.0068	0.0055 U	0.0038	0.0055 U	0.005 U
VOCs (mg/kg) - 8021 B									
Benzene	21.0	0.013	---	---	---	---	---	---	---
Toluene	2,600	4.1	---	---	---	---	---	---	---
Ethylbenzene	4,000	3.8	---	---	---	---	---	---	---
Total Xylenes	3,300	61	---	---	---	---	---	---	---
SVOCs (mg/kg) - 8270									
Naphthalene	120	16	36.0 U	0.360 U	36.0 U	0.37 U	3.50 U	0.37 U	NA
Phenanthrene	1,700	210	36.0 U	0.360 U	36.0 U	1.370	3.50 U	1.37	NA
Fluoranthene	2,300	960	36.0 U	0.360 U	36.0 U	0.37 U	3.50 U	0.37 U	NA
Pyrene	1,700	560	36.0 U	0.360 U	36.0 U	0.37 U	3.50 U	0.37 U	NA
Benzo(a)anthracene	5.6	8.9	36.0 U	0.360 U	36.0 U	0.37 U	3.50 U	0.37 U	NA
bis (2- Ethylhexyl) phthalate	43	82	7.40 J	0.048 J	36.0 U	0.044 J	0.510 J	0.081 J	NA
Chrysene	560	770	36.0 U	0.360 U	36.0 U	0.37 U	3.50 U	0.37 U	NA
Di-n-octyl phthalate	1,300	810,000	36.0 U	0.360 U	36.0 U	0.37 U	3.50 U	0.37 U	NA
Benzo(b)fluoranthene	6	30	36.0 U	0.360 U	36.0 U	0.37 U	3.50 U	0.37 U	NA
Benzo(g,h,i)perylene	1,800	23,000	36.0 U	0.360 U	36.0 U	0.37 U	3.50 U	0.37 U	NA
2-Methylnaphthalene	2,500	85	36.0 U	0.360 U	36.0 U	0.37 U	3.50 U	0.37 U	NA
Acenaphthene	3,000	120	36.0 U	0.360 U	36.0 U	0.37 U	3.50 U	0.37 U	NA
Fluorene	2,300	150	36.0 U	0.360 U	36.0 U	0.37 U	3.50 U	0.37 U	NA
Anthracene	18,000	3,400	36.0 U	0.360 U	36.0 U	0.37 U	3.50 U	0.37 U	NA
Benzo(k)fluoranthene	57	310	36.0 U	0.360 U	36.0 U	0.37 U	3.50 U	0.37 U	NA
Benzo(a)pyrene	0.56	3.8	36.0 U	0.360 U	36.0 U	0.37 U	3.50 U	0.37 U	NA
Indeno (1,2,3-cd) pyrene	5.7	87	36.0 U	0.360 U	36.0 U	0.37 U	3.50 U	0.37 U	NA
Dibenz (a,h) anthracene	0.55	7.6	36.0 U	0.360 U	36.0 U	0.37 U	3.50 U	0.37 U	NA
Acenaphthylene	3,800	220	36.0 U	0.360 U	36.0 U	0.37 U	3.50 U	0.37 U	NA
Butylbenzylphthalate	5,700	1,300	36.0 U	0.360 U	36.0 U	0.37 U	3.50 U	0.37 U	NA
Metals (mg/kg) - 6010/7000 Series									
Arsenic	24	13	---	---	---	---	---	---	---
Barium	2,800	220	---	---	---	---	---	---	---
Cadmium	43	0.75	---	---	---	---	---	---	---
Chromium	23,000	1,200	---	---	---	---	---	---	---
Lead	500	1.5	---	---	---	---	---	---	---
Mercury	6	1.0	---	---	---	---	---	---	---
Selenium	310	1.1	---	---	---	---	---	---	---
Silver	95	0.240	---	---	---	---	---	---	---
Total Petroleum Hydrocarbons (mg/kg)									
TPH 418.1	-	-	---	---	---	---	---	---	---
TPH 1005	-	-	---	---	---	---	---	---	---
C ₆ - C ₁₀	1,600	20	---	---	---	---	---	---	---
> C ₁₀ - C ₂₈	1,600	20	---	---	---	---	---	---	---
C ₆ - C ₂₈	1,600	20	---	---	---	---	---	---	---
Oil & Grease	-	-	---	---	---	---	---	---	---

¹ Sample RDS-29 was a trip blank.

² Sample S-2 is a duplicate of sample S-1.

³ Sample S-8 is a duplicate of sample S-7.

* Soil sample was analyzed for SVOCs by EPA Method 8310.

J = Indicates an estimated value

E = Concentration exceeds the calibration range of the GC MS

B = Analyte detected in method blank.

Bold = Detected concentrations exceed the critical Tier 1 PCL f for residential land use at a 30 acre source area.

232/[<0.015] = Total concentration (mg/kg) / SPLP concentrati

Table 2
Summary of Detected Concentrations in Verification Samples
Rubble Dump Spill Site (SWMU 16)
Fort Bliss, El Paso, Texas

Analyte	Residential Tier 1 PCLs		Sample I.D.					
	Tot Soil _{Comb}	GW Soil	Ft. Bliss #1	RDS-100*	RDS-1V*	RDS-6V*	RDS-10V*	RDS-11V*
			(0-1) 12/20/99	(0-1) 1/3/2001	(0-1) 1/3/2001	(0-1) 1/3/2001	(0-1) 1/3/01	(0-1) 1/3/2001
VOCs (mg/kg) - 8260								
Naphthalene	120	16	ND	---	---	---	---	---
Methylene Chloride	260	0.0065	ND	---	---	---	---	---
Acetone	3,400	2.4	ND	---	---	---	---	---
2-Butanone	9,500	15	ND	---	---	---	---	---
4-Methyl-2-pentanone	-	-	ND	---	---	---	---	---
2-Hexanone	4,900	-	ND	---	---	---	---	---
Toluene	2,600	4.1	ND	---	---	---	---	---
VOCs (mg/kg) - 8021 B								
Benzene	21.0	0.013	< 0.050	---	---	---	---	---
Toluene	2,600	4.1	< 0.050	---	---	---	---	---
Ethylbenzene	4,000	3.8	< 0.050	---	---	---	---	---
Total Xylenes	3,300	61	< 0.050	---	---	---	---	---
SVOCs (mg/kg) - 8270								
Naphthalene	120	16	ND	2.100 U	0.086 U	0.043 U	0.044 U	0.210 U
Phenanthrene	1,700	210	ND	0.170 U	0.007 U	0.003 U	0.003 J	0.021
Fluoranthene	2,300	960	ND	0.210 U	0.009 U	0.004 U	0.004 J	0.021 U
Pyrene	1,700	560	ND	0.420 U	0.017 U	0.009 U	0.009 U	0.021 U
Benzo(a)anthracene	5.6	8.9	ND	0.210 U	0.009 U	0.004 U	0.004 U	0.021 U
bis (2-Ethylhexyl) phthalate	43	82	ND	NA	NA	NA	NA	NA
Chrysene	560	770	ND	0.210 U	0.009 U	0.004 U	0.004 U	0.012
Di-n-octyl phthalate	1,300	810,000	ND	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	6	30	ND	0.086 U	0.003 U	0.002 U	0.002	0.009 U
Benzo(g,h,i)perylene	1,800	23,000	ND	0.340 U	0.017	0.007 U	0.007 U	0.034 U
2-Methylnaphthalene	2,500	85	ND	NA	NA	NA	NA	NA
Acenaphthene	3,000	120	ND	4.200 U	0.170 U	0.086 U	0.088 U	0.730
Fluorene	2,300	150	ND	0.420 U	0.017 U	0.009 U	0.009 U	0.073
Anthracene	18,000	3,400	ND	0.086 U	0.003 U	0.002 U	0.002 U	0.009 U
Benzo(k)fluoranthene	57	310	ND	0.086 U	0.003 U	0.002 U	0.001 J	0.009 U
Benzo(a)pyrene	0.56	3.8	ND	0.210 U	0.009 U	0.004 U	0.004 U	0.021 U
Indeno (1,2,3-cd) pyrene	5.7	87	ND	0.210 U	0.043 U	0.004 U	0.004 U	0.021 U
Dibenz (a,h) anthracene	0.55	7.6	ND	0.850 U	0.014 J	0.017 U	0.018 U	0.084 U
Acenaphthylene	3,800	220	ND	2.100 U	0.086 U	0.043 U	0.044 U	0.620
Butylbenzylphthalate	5,700	1,300	ND	NA	NA	NA	NA	NA
Metals (mg/kg) - 6010/7000 Series								
Arsenic	24	13	---	3.7	4.0	2.9	12.9	3.6
Barium	2,800	220	---	47.6	49.3	45.0	106	45.0
Cadmium	43	0.75	---	0.73	2.1	0.21	3.1[<0.005]	0.07 B
Chromium	23,000	1,200	---	7.0	7.8	5.6	19.2[<0.050]	8.3
Lead	500	1.5	---	70.1	220	16.6	232[<0.015]	7.1
Mercury	6	1.0	---	0.03	0.03	0.02	0.02 U	0.02 U
Selenium	310	1.1	---	0.23	0.37	0.23	0.51	0.33
Silver	95	0.240	---	0.20	0.16	0.12	0.57	0.11 U
Total Petroleum Hydrocarbons (mg/kg)								
TPH 418.1	-	-	---	---	---	---	---	---
TPH 1005	-	-	---	---	---	---	---	---
C ₆ - C ₁₀	1,600	20	< 50	---	---	---	---	---
> C ₁₀ - C ₂₈	1,600	20	< 50	---	---	---	---	---
C ₆ - C ₂₈	1,600	20	< 50	---	---	---	---	---
Oil & Grease	-	-	---	---	---	---	---	---

¹ Sample RDS-29 was a trip blank.

² Sample S-2 is a duplicate of sample S-1.

³ Sample S-8 is a duplicate of sample S-7.

* Soil sample was analyzed for SVOCs by EPA Method 8310

J = Indicates an estimated value.

E = Concentration exceeds the calibration range of the GC MS.

B = Analyte detected in method blank.

Bold = Detected concentrations exceed the critical Tier 1 PCL for residential land use at a 30 acre source area.

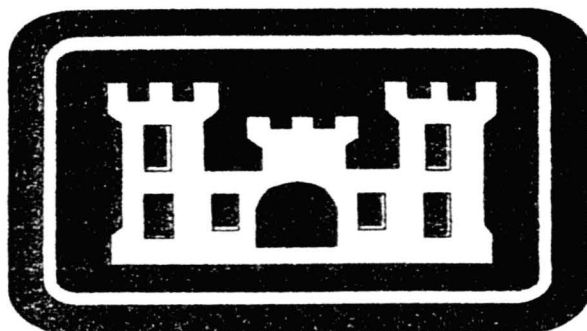
232 [<0.015] = Total concentration (mg/kg) / SPLP concentration (mg/L)

APPENDIX A

PRELIMINARY SITE INVESTIGATION REPORT – Golder Associates

Final Report Preliminary Site Investigations

**Directorate of Environment
Fort Bliss, Texas
and
Fort Worth District
U.S. Army Corps of Engineers**



By



**Golder
Associates**

**2201 Buena Vista Dr. SE, Suite 400
Albuquerque, New Mexico 87106**

For

DBS JOINT VENTURE / BOHANNAN-HUSTON INC.

**7500 Jefferson NE
Albuquerque, New Mexico 87109**



July 1997

5.0 RUBBLE DUMP SITE

5.1 *Description of Field Activities*

On November 4 and 10, 1995, samples were collected at the Rubble Dump Site as part of a PSI in order to determine the nature and extent of potential contaminants of concern associated with the two reported releases of petroleum/oil/lubricant (POL) and/or septic material, construction debris (specifically roof shingles), and to provide a preliminary assessment of any hazardous materials or contaminants present in the dumping area. The site is located along Power Line Road, southeast of Biggs Army Air Field, east of the El Paso Airport, and north of Montana Road. Two previous reports of release events at the site were documented in the USAEHA 1988 survey and during a July 1989 site survey (Ft. Bliss/WP1-3.8, 2/26/90). The two releases include: 1) release of an unknown liquid which covered an estimated area of 50 feet by 100 feet, and 2) release of POL which covered an estimated one-mile stretch along both sides of Power Line Road. The documentation does not include specific information on where the spills were located along Power Line Road.

Prior to the detailed site survey of the dumping area, aerial photos from two different sources were reviewed. The first aerial photos of the area were obtained from a group within Fort Bliss but did not reveal enough detail of the site to identify any release areas. In addition, a 1986 aerial photo comprised of approximately two-thirds to three-quarters of the area investigated, was obtained from the City of El Paso, Planning, Research and Development Department. The scale of this photo was better and four separate possible release areas west of Power Line Road were identified on the aerial photo.

Field activities were conducted in accordance with the Sampling and Analysis Plan (October 1995) except for the following changes: 1) only fifteen surface soil samples were collected; 2) only thirteen different construction debris (roofing material, floor and ceiling tiles, etc) samples were collected; and, 3) sampling locations equally spaced along Power Line Road as described in the Sampling and Analysis Plan were not collected. A fewer number of samples were collected than stated in the Sampling and Analysis Plan because field observations suggested that a smaller number of samples collected were adequate for a preliminary assessment of the site.

The main area of the detailed site survey covered an area approximately 1.5 miles north-south along Power Line Road and 100 feet to the east and west of Power Line Road. In some cases, the distance to the west extended as far as 500 feet from Power Line Road. The areas surveyed at greater distances from the road were determined by field observations or suspect areas on the 1986 aerial photo. Ninety percent of the unauthorized dumping appeared to be within 100 feet from the east and west edges of Power Line Road. The additional ten percent of the unauthorized dumping occurred at greater distances from Power Line Road as observed in the field and on the 1986 aerial photo.

During November 2 through 4, 1995, the site survey was conducted in the following manner. Colored pin flags were utilized to mark the potential sample locations. The highest priority category was marked with pink flags and included possible asbestos shingles, other construction debris which might contain asbestos, solvent cans, paint cans, and other debris which might contain regulated substances. The medium priority category was marked with orange flags and it included other roofing materials, other construction debris, and any other debris which may be of concern.

The lowest priority category was marked with green flags and it included other types of household items which may be of concern. A 100-foot grid was set up along Power Line Road so that estimated locations could be determined when marking sampling locations and other information on a map.

It is estimated from the detailed site survey that 80 percent of the material dumped along Power Line Road is construction and/or demolition debris. The remaining 20 percent consists of household trash, empty paint cans, empty solvent cans, broken glass, landscaping debris, plastic, furniture, wood and other miscellaneous household trash.

Two of the four dark stained areas previously reported, were found in the detailed site survey of the area. Two additional dark areas on the 1986 aerial photo were checked in the field to determine if a release was the potential cause of the discoloration detected on the photo. The field check confirmed this making a total of four different release areas observed and sampled in the field.

Fifteen soil samples (RDS-1 through RDS-11, and RDS-25 through RDS-28) were collected from black stained soil associated with releases of POL or other unknown liquids, and from beneath burnt construction debris. Thirteen samples (RDS-12 through RDS-24) were collected from roofing shingles and other construction materials. Sample type and location details are presented in Table 6. All sampling locations are illustrated on the index map for approximately two-thirds of the area of investigation for the Rubble Dump Site in Figure 3. The map only illustrates part of the area of investigation because no samples were collected north of power pole #9. The index map is broken down into four additional figures (Figures 4 through Figure 7) to illustrate more detail and sample location numbers.

5.2 Sample Analyses

All samples were submitted to an approved ACOE MRD laboratory for analyses. Soil samples RDS-1 through RDS-11 and RDS-25 through RDS-28 were submitted for VOC analysis by EPA SW 846 Methods 5030/8260, SVOC analysis by EPA SW 846 Method 8270, total petroleum hydrocarbons (TPH) by EPA Method 418.1, and oil and grease by EPA Method 413.2. Samples RDS-12 through RDS-24 were submitted for asbestos analysis by EPA Method 600/R-93/116. A trip blank, sample RDS-29 was submitted for VOC analysis by EPA SW 846 Methods 5030/8260. A minimal level of data validation was performed on the data. This included verification of requested deliverables and verification that holding times were met for extraction and analyses. No other validation, transcription or calculation checks were performed.

5.3 Analytical Results

The detectable concentrations of all analytes are presented in Table 7. The organic and inorganic qualifiers are defined at the bottom of Table 7. VOCs were detected in samples RDS-25 and RDS-26. Naphthalene concentrations in these samples ranged from 5 to 7 µg/kg. Methylene chloride was detected in the trip blank sample (RDS-29) at 230(E) µg/kg. It is possible that this compound is a lab contaminant and not actually present in the sample.

SVOCs were detected in samples RDS-5, RDS-6, RDS-7, RDS-10, RDS-11, and RDS-25 through RDS-28. Ranges of concentrations for detected SVOCs are as follows: ND to 2600 µg/kg bis(2-ethylhexyl) phthalate; ND to 9900(E) µg/kg naphthalene; ND to 75000(E) µg/kg phenanthrene; ND to 16000(E) µg/kg fluoranthene; ND to 28000(E) µg/kg pyrene; ND to 8800(E) µg/kg benzo[a]anthracene; ND to 8700(E) µg/kg chrysene; ND to 140(J) µg/kg di-n-octyl phthalate; ND

to 8400 µg/kg benzo[b]fluoranthene; ND to 250 µg/kg benzo[g,h,i]perylene; ND to 21000(E) µg/kg 2-methylnaphthalene; ND to 5300 µg/kg acenaphthene; ND to 8000(J) µg/kg fluorene; ND to 13000(E) µg/kg anthracene; ND to 1500(E) µg/kg benzo[k]fluoranthene; ND to 7500(E) µg/kg benzo[a]pyrene; ND to 2000 µg/kg indeno[1,2,3-cd]pyrene; ND to 1300 µg/kg dibenz[a,h]anthracene; ND to 14000(J) µg/kg acenaphthylene; and, ND to 1700 µg/kg butylbenzyl phthalate.

TPH and oil and grease were detected in samples RDS-1 through RDS-5, RDS-7, RDS-8, RDS-10, RDS-11 and RDS-25 through RDS-28. The TPH concentrations ranged from ND to 3700 mg/kg and the oil and grease concentrations ranged from ND to 7690 mg/kg.

Asbestos was detected in samples RDS-19 and RDS-21. The asbestos type detected in both samples was chrysotile and the percentages detected were 25% and 60%, respectively.

5.4 *Summary and Recommendations*

A summary of field observations and analytical results is as follows:

- asbestos was identified in floor tiles but not roofing materials as originally expected;
- the asbestos floor tiles were randomly scattered across the site;
- all the roofing material appeared to be the same type and the samples collected did not contain asbestos;
- four POL releases were observed on the west side of Power Line Road and sampled;
- naphthalene was detected in two samples from one POL release area;
- a wide range of SVOCs were detected in seven of the 15 samples from the POL release areas;
- TPH and oil and grease were detected in 13 samples from the POL release areas;
- it is possible that these POL release areas may be older than originally suspected, as suggested by the absence of VOCs; and,
- soil samples were not analyzed for metals, pesticides, herbicides and PCBs.

Based upon the PSI results for this site, the limited data set suggests there are data gaps for metals, pesticides, herbicides and dioxins for the releases areas and there may be additional release areas which have not been identified. The TNRCC does not set action level concentrations (i.e. a specific concentration, that when exceeded, requires remedial action) for those VOCs, SVOCs, TPH, and oil and grease identified at the Rubble Dump site. For comparison purposes, the identified compounds are related to "Medium Specific Concentrations for Health-Based Closure/Remediation" identified in Chapter 335, Subchapter S (Risk Reduction Standards) of the Industrial Solid Waste and Municipal Hazardous Waste Code set by the TNRCC and to "Risk-Based Concentrations" (Smith, 1995) established by the EPA. This comparison is made per the request of Ft. Bliss, Directorate of Environment draft report review. As shown in Table 8, RDS-10, a stained soil sample, is above EPA's residential land use standard for benzo[a]anthracene, benzo[b]fluoranthene, benzo[a]pyrene, and indeno[1,2,3-cd]pyrene but below the commercial/industrial land use standard. In addition, sample RDS-10 exceeds both residential and commercial/industrial land use standards for dibenz[a,h]anthracene.

Other compounds which were detected in the soils but are below both residential and commercial/industrial land use standards for the TNRCC and/or EPA are:

- *indeno[1,2,3-cd]pyrene*
- *naphthalene*
- *bis(2-ethylhexyl)phthalate*
- *benzo[a]anthracene*
- *chrysene*
- *benzo[b]fluoranthene*
- *fluoranthene*
- *pyrene*
- *di-n-octyl phthalate*
- *benzo[k]fluoranthene*
- *benzo[a]pyrene*
- *acenaphthene*
- *fluorene*
- *anthracene*
- *butylbenzyl*
- *dibenz(a,h)anthracene*

The following compounds are not listed in the TNRCC's "Medium Specific Concentrations for Health-Based Closure/Remediation" table or EPA's "Risk-Based Concentration" table:

- *phenanthrene*
- *benzo[g,h,i]perylene*
- *asbestos*
- *2-methylnaphthalene*
- *acenaphthylene*
- *various TICs*
- *TPH*
- *oil and grease*

This comparison with TNRCC's "Medium Specific Concentrations for Health-Based Closure/Remediation" and EPA's "Risk-Based Concentrations" is not presented in lieu of a risk assessment and does not make inference to how clean or contaminated the site is based on these values. It is strictly for comparison purposes only and should not be used or interpreted as a risk assessment.

The recommendations listed below are in order of highest priority. Additional site investigation activities can be stopped at any time if it is determined that the contaminants do not pose an environmental risk. The following activities are recommended at the Rubble Dump Site: 1) perform a higher level of data validation to verify analytical results; 2) remove the construction debris which contains asbestos and dispose of it according to regulations; 3) collect additional soil samples from the four known release areas and analyze them for metals, PCBs, pesticides, dioxins, and herbicides; 4) obtain additional aerial photos prior to and after 1986, if possible, to identify additional suspect release areas and verify the additional suspect release areas in the field, if any; 5) if aerial photos are not available to assist with identifying possible release locations, then a detailed site survey may have to be extended to greater distances away from Power Line Road; 6) evaluate all construction debris at the site to determine if any additional asbestos containing construction debris is present, since the asbestos results for the floor tiles suggest that roofing material is not the main construction debris of concern for asbestos; 7) determine a screening action level so that a risk assessment can be conducted in order to determine if any of the contaminants will pose a risk to human health or the environment; 8) collect additional samples, if required, to adequately define any newly identified release areas; and, 9) if the contamination for any release area is determined to be a risk, then a remedial action plan can be prepared to adequately address the issues.

**TABLE 6
RUBBLE DUMP SITE SAMPLE LOCATIONS**

DATE COLLECTED	SAMPLE ID	SAMPLE DESCRIPTION	APPROXIMATE SAMPLE LOCATION	COMMENTS
11/4/95	RDS-1	Black stained sand with dark gray crust on surface of sand, 0 to 6 inches bgs	220 feet N of pole #2 and 84 feet W of road	Photo #A-6; PID = 0.0 ppmv
11/4/95	RDS-2	Orange sand below the stained sand at a depth of about 1 ft bgs	220 feet N of pole #2 and 84 feet W of road	PID = 0.0 ppmv; Photo #A-7 - overview of stained area
11/4/95	RDS-3	Black stained sand with black crust on surface of sand, 0 to 6 inches bgs	180 feet N of pole #2 and about 220 feet W of road	PID = 0.0 ppmv; Photo #A-8
11/4/95	RDS-4	Orange sand below the stained sand at a depth of about 1 ft bgs	180 feet N of pole #2 and about 220 feet W of road	PID = 0.0 ppmv; Photo #A-8
11/4/95	RDS-5	Black stained sand with oily odor and dark stained gravel	400 feet N of pole #2 and 1 to 2 feet W of road	Photo #A-9; PID = 0.0 ppmv
11/4/95	RDS-6	Black stained sand and concrete with crusty residue on sand	525 feet N of pole #3 and 2 to 3 feet W of road	Photo #A-10; PID = 0.0 ppmv
11/4/95	RDS-7	Black stained sand with oily odor and black crust on surface; 0 to 2 inches bgs	180 feet N of pole #4 and 25 to 30 feet W of road	Photo #A-11; PID = 0.0 ppmv
11/4/95	RDS-8	Surface 0.5 inches of sand was not stained, next 1.5 inches of sand was stained black; 0.5 to 2.0 inches bgs	185 to 190 feet N of pole #4 and 40 to 45 feet W of road	Photo #A-12; PID = 0.0 ppmv
11/4/95	RDS-9	Black oily stained sand; 0.0 to 1.5 inches bgs	300 feet N of pole #5 and 45 feet W of road	Photo #A-13; PID = 0.0 ppmv
11/4/95	RDS-10	Grayish brown crust with black stained sand, 2 ft by 3 ft area; crust was very solid and difficult to break; 0 to 0.5 inches	299 feet N of pole #5 and 40 feet W of road	Photo #A-14; PID = 0.0 ppm
11/4/95	RDS-11	Burned yellow styrofoam or plastic with bad odor; underlying sand was stained gray to black; 0 to 1.5 inches bgs	555 feet N of pole #7 and 25 feet W of road	Photo #A-14; PID = 0.0 ppm
11/4/95	RDS-12	Black tar paper and roof shingles	650 feet N of pole #3 and 10 to 15 feet W of road	Photo #A-15
11/4/95	RDS-13	Black roof shingles	90 to 95 feet N of pole #4 and 65 to 70 feet W of road	Photo #A-16
11/4/95	RDS-14	Red, green and black roof shingles	270 feet N of pole #4 and 25 feet W of road	Photo #A-17
11/4/95	RDS-15	Black and white roof shingles	455 feet N of pole #4 and 60 feet W of road	Photo #A-18
11/4/95	RDS-16	Dark brown and black roof shingles	455 to 460 feet N of pole #4 and 50 feet W of road	Photo #A-19
11/4/95	RDS-17	Black roof shingles	200 feet N of pole #5 and 50 feet W of road	Photo #A-20

TABLE 6
RUBBLE DUMP SITE SAMPLE LOCATIONS

DATE COLLECTED	SAMPLE ID	SAMPLE DESCRIPTION	APPROXIMATE SAMPLE LOCATION	COMMENTS
11/4/95	RDS-18	Black roof shingles (visible fibers)	390 feet N of pole #5 and 40 feet W of road	Photo #A-21
11/4/95	RDS-19	White with multicolored spot floor tiles, some tiles have black backing	485 feet N of pole #5 and 55 feet W of road	Photo #A-22
11/4/95	RDS-20	Black roof shingles (visible fibers)	590 feet N of pole #5 and 25 feet W of road	Photo #A-23
11/4/95	RDS-21	Black floor tile	380 feet N of pole #2 and 6 to 8 feet E of road	Photo #A-24
11/4/95	RDS-22	White wall board or ceiling tile found with other construction debris	197 feet N of pole #2 and 15 feet W of road	Photo #A-25
11/4/95	RDS-23	Yellowish brown material with black back, found with other types of construction debris	195 feet N of pole #2 and 15 feet W of road	Photo #A-26
11/4/95	RDS-24	Black, unknown type of construction material, found in same pile as broken tiles and shingles	500 feet N of pole #1 and 75 feet W of road	Photo #A-27
11/10/95	RDS-25	Black stained sand	440 to 450 feet N of pole #3 and 40 feet W of road	Identified on 1986 aerial photograph from City of El Paso Planning Dept.
11/10/95	RDS-26	Black stained sand	450 to 460 feet N of pole #3 and 510 to 515 feet W of road	Identified on 1986 aerial photograph from City of El Paso Planning Dept.
11/10/95	RDS-27	Black stained sand	90 feet N of pole #6 and 215 feet W of road	Identified on 1986 aerial photograph from City of El Paso Planning Dept.
11/10/95	RDS-28	Black stained sand	50 feet N of pole #6 and 290 feet W of road	Identified on 1986 aerial photograph from City of El Paso Planning Dept.

Notes:

road = Power Line Road
pole #1 = Power Pole #1
N = North
W = West
E = East

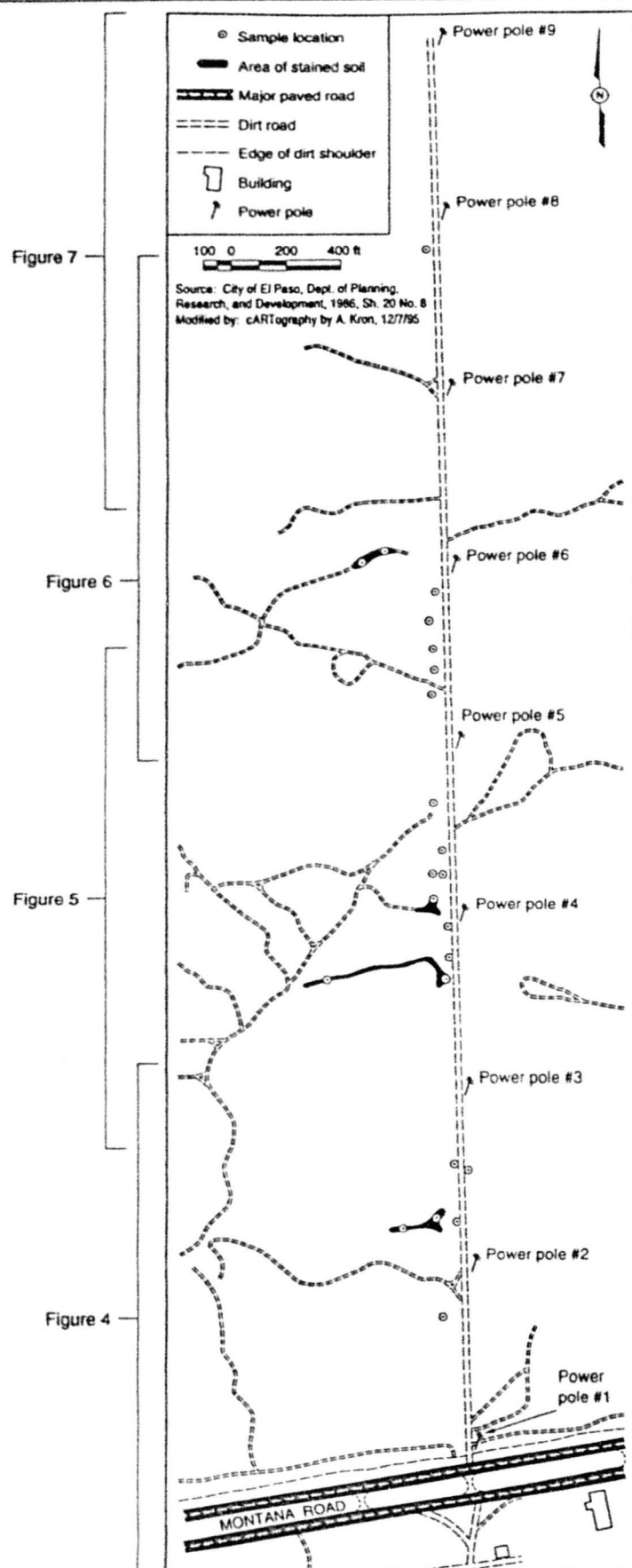


Figure 3. Index map for area of investigation at the Rubble Dump Site, Fort Bliss, Texas.

GOLDER ASSOCIATES INC. FOR DBS JV/BOHANNAN-HUSTON, INC.

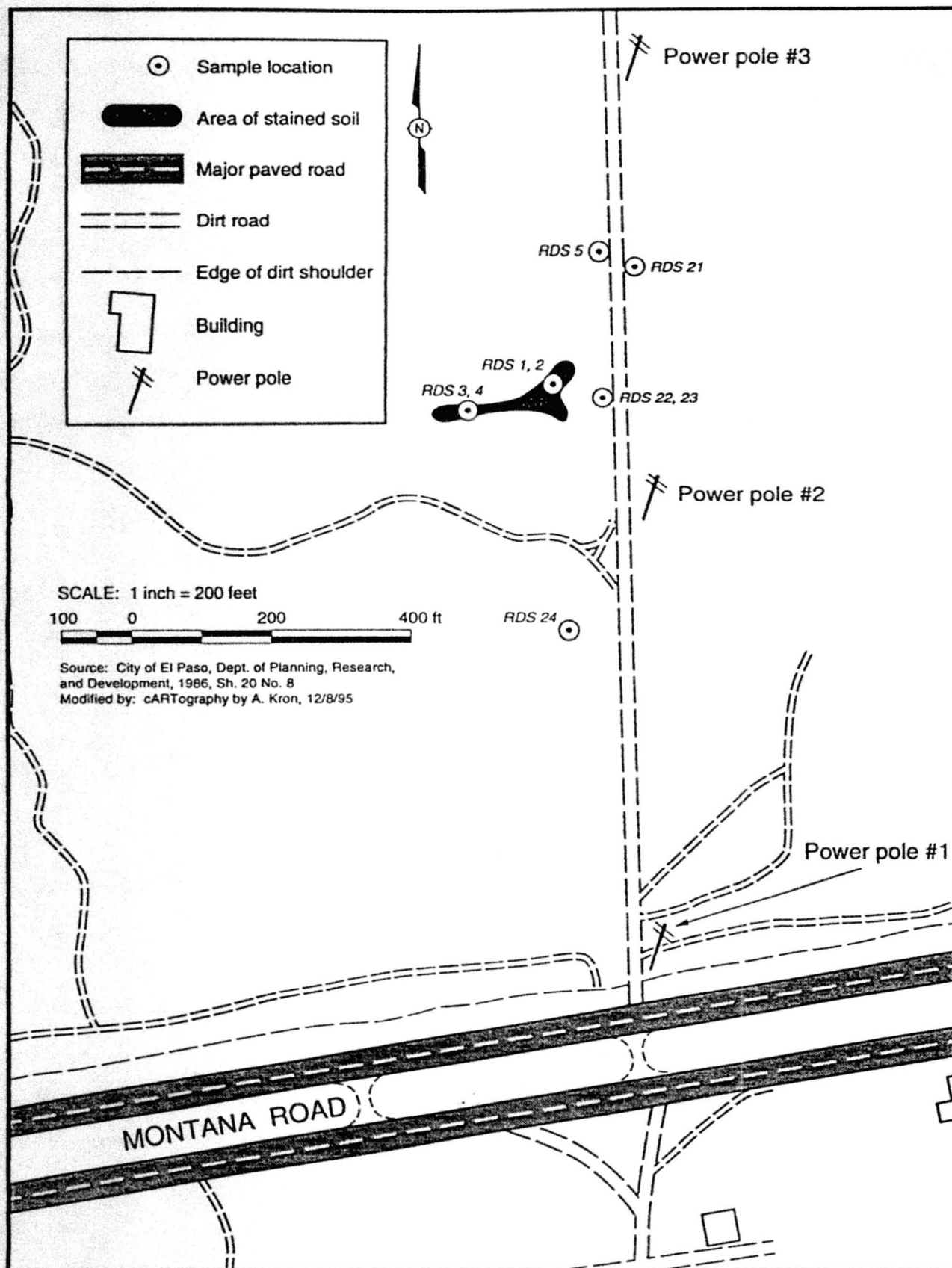


Figure 4. Estimated sampling locations between power poles #1 through #3 for the Rubble Dump Site, Fort Bliss, Texas.

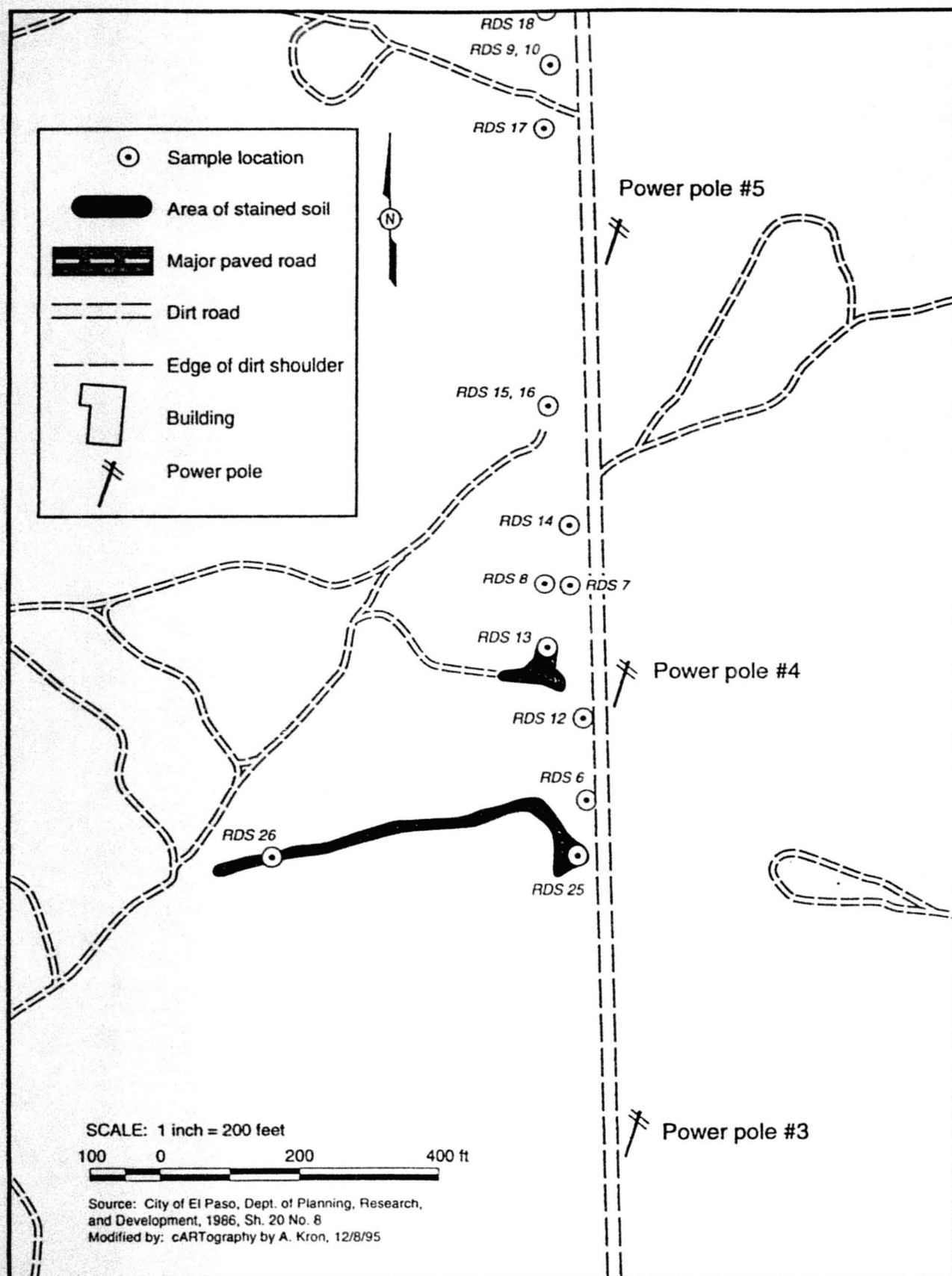


Figure 5. Estimated sampling locations between power poles #3 through #5 for the Rubble Dump Site, Fort Bliss, Texas.

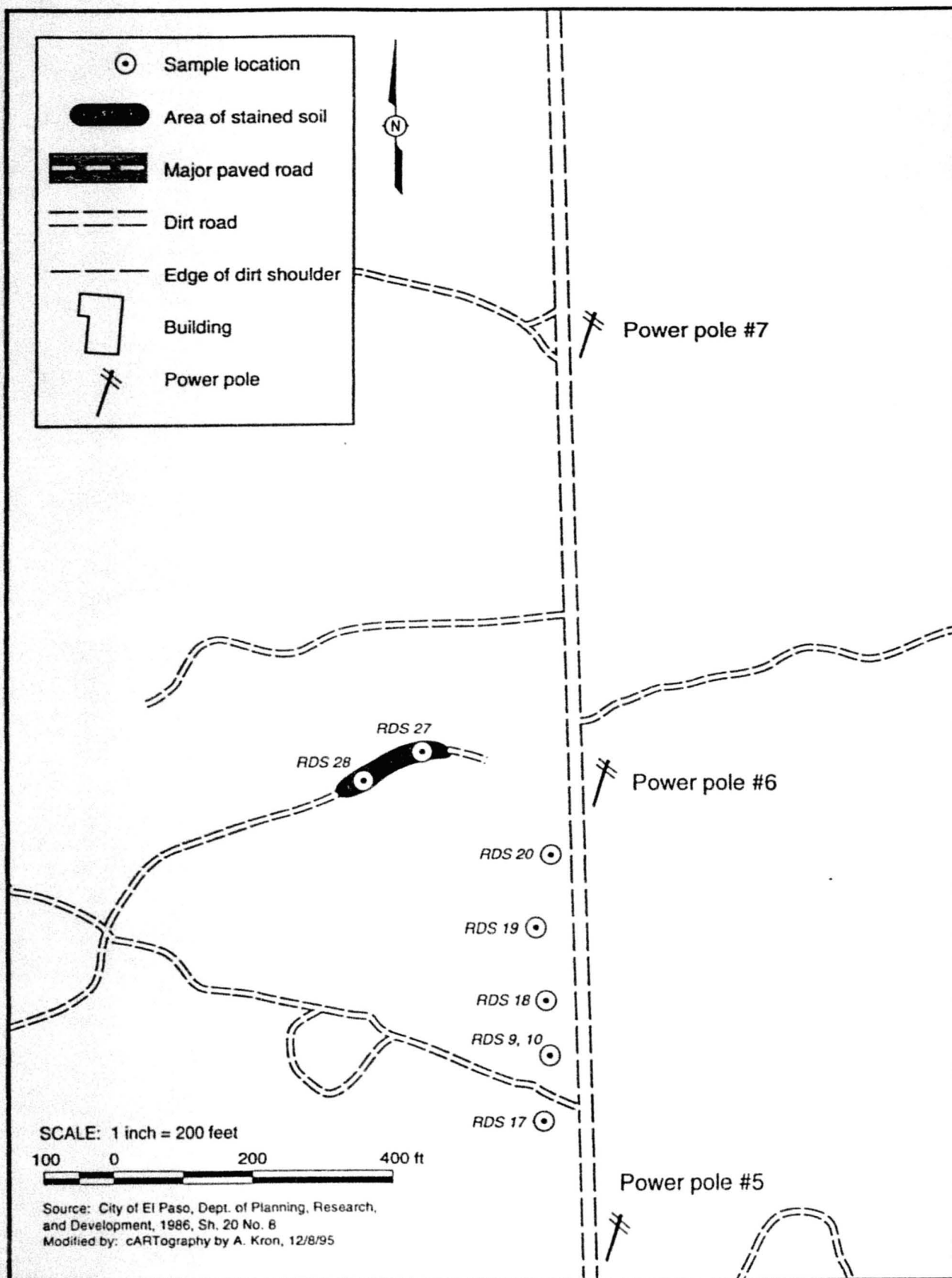


Figure 6. Estimated sampling locations between power poles #5 through #7 for the Rubble Dump Site, Fort Bliss, Texas.

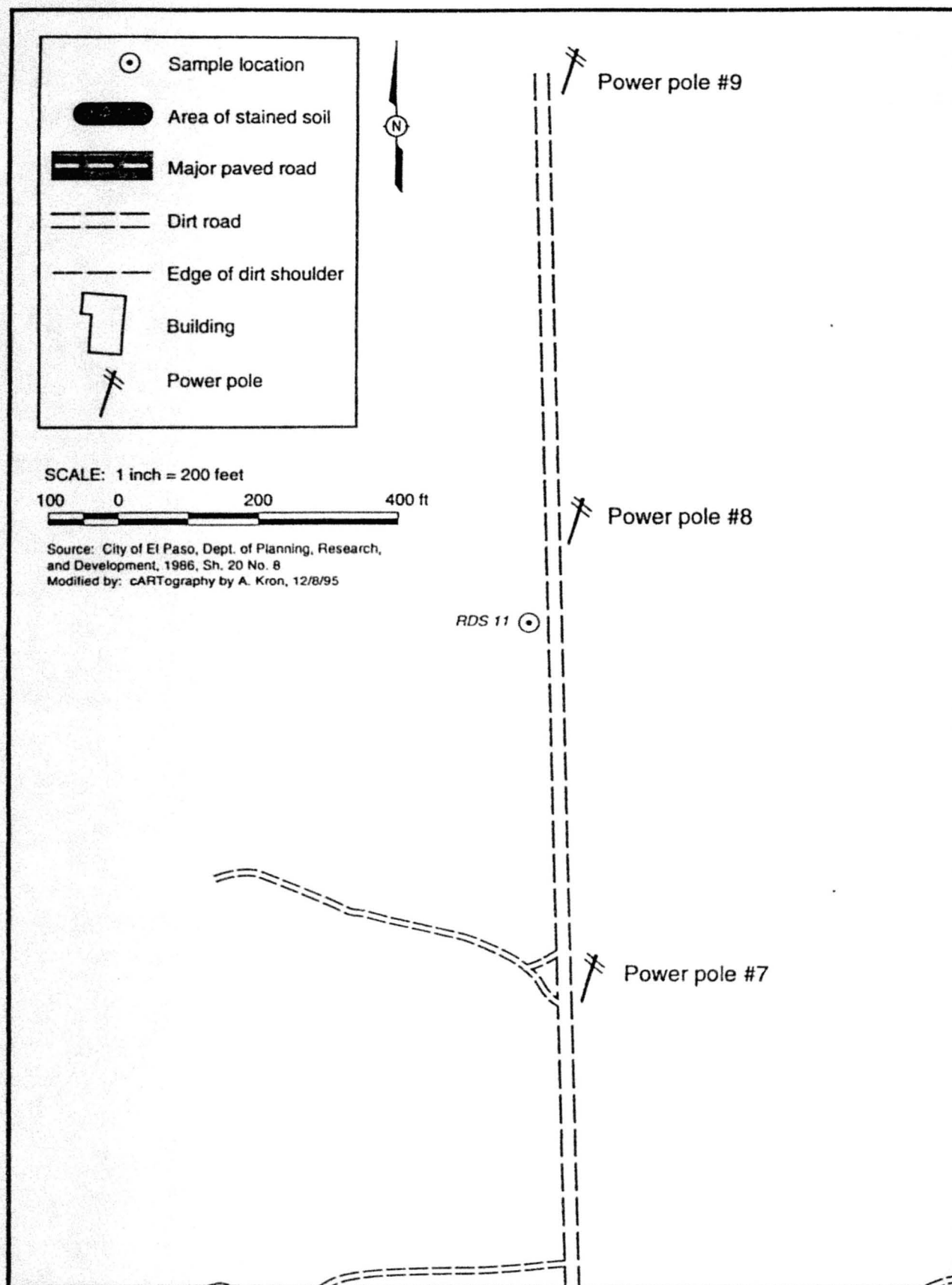


Figure 7. Estimated sampling locations between power poles #7 through #9 for the Rubble Dump Site, Fort Bliss, Texas.

**TABLE 7
RUBBLE DUMP SITE
ANALYTICAL RESULTS**

Sample ID Number	Date Sampled	Sample Description	Volatile Organic Compounds EPA SW 846 Method 8260		Semi-Volatile Organic Compounds EPA SW 846 Method 8270		Oil and Grease Total Petroleum Hydrocarbons		Asbestos	
			Constituent	(u/gkg)	Constituent	(ug/kg)	Constituent	mg/kg (dry)	Constituent	(%)
RDS-1	11/4/95	black stained sand	TICs: Unknown TIC	6(J)	1 Unknown acid methyl ester Cyclopentasiloxane, decamethyl 6 Unknown organic acid TICs 10 Unknown TICs	200(J) 1100(JN) 150(J) to 8900(J) 150(J) to 2000(J)	Oil and grease TPH	3100 2420	Not Analyzed	
RDS-2	11/4/95	orange sand	Not Detected		TICs: Cyclopentasiloxane, decamethyl 1 Unknown organic acid TIC 5 Unknown hydrocarbon TICs 5 Unknown TICs	170(JN) 180(J) 200(J) to 640(J) 210(J) to 2700(J)	Oil and grease TPH	40.2 29.1	Not Analyzed	
RDS-3	11/4/95	black stained sand	TICs: Cyclotetrasiloxane, octameth	42(J)	TICs: Cyclopentasiloxane, decamethyl Cyclohexasiloxane, dodecamethyl 1 Unknown hydrocarbon TIC 6 Unknown TICs	1800(JN) 1300(JN) 150(J) 190(J) to 2200(J)	Oil and grease TPH	45.9 34.9	Not Analyzed	
RDS-4	11/4/95	orange sand	TICs: Cyclotetrasiloxane, octameth 1 Unknown TIC	18(J) 100(J)	TICs: Cyclopentasiloxane, decamethyl Cyclohexasiloxane, dodecamethyl 7 Unknown hydrocarbon TICs 5 Unknown TICs	230(JN) 140(JN) 150(J) to 540(J) 270(J) to 1700(J)	Oil and grease TPH	27.8 31.6	Not Analyzed	
RDS-5	11/4/95	black stained sand and gravel	Not Detected		bis(2-Ethylhexyl)phthalate TICs: Cyclopentasiloxane, decamethyl 9 Unknown hydrocarbon TICs 9 Unknown TICs	580 280(JN) 140(J) to 4800(J) 140(J) to 2500(J)	Oil and grease TPH	61.7 46.6	Not Analyzed	
RDS-6	11/4/95	black stained sand	TICs: 1 Unknown TIC	36(J)	Naphthalene Phenanthrene Fluoranthene Pyrene Benzo[a]anthracene bis(2-Ethylhexyl) phthalate Chrysene Di-n-octyl phthalate Benzo[b]fluoranthene Benzo[g,h,i]perylene TICs: Cyclopentasiloxane, decamethyl Cyclohexasiloxane, dodecamethyl Biphenyl Isomer of trimethylnaphthalene Isomer of C7H5NS 1 Unknown hydrocarbon TIC 1 Unknown organic acid TIC 13 Unknown TICs	95(J) 130(J) 71(J) 410 70(J) 1900 130(J) 140(J) 120(J) 110(J) 470(JN) 290(JN) 280(JN) 170(J) 210(J) 170(J) 290(J) 170(J) to 3800(J)	Oil and grease TPH	< 25.2 < 25.0	Not Analyzed	

**TABLE 7
RUBBLE DUMP SITE
ANALYTICAL RESULTS**

Sample ID Number	Date Sampled	Sample Description	Volatile Organic Compounds EPA SW 846 Method 8260		Semi-Volatile Organic Compounds EPA SW 846 Method 8270		Oil and Grease Total Petroleum Hydrocarbons		Asbestos	
			Constituent	(u/gkg)	Constituent	(ug/kg)	Constituent	mg/kg (dry)	Constituent	(%)
RDS-7	11/4/95	black stained sand	Not Detected		bis(2-Ethylhexyl) phthalate TICs: Cyclopentasiloxane, decamethyl Cyclohexasiloxane, dodecamethyl 2 Unknown hydrocarbon TICs 4 Unknown TICs	75(J) 320(JN) 170(JN) 190(J) to 200(J) 980(J) to 2300(J)	Oil and grease TPH	578 558	Not Analyzed	
RDS-8	11/4/95	black stained sand	Not Detected		TICs: Cyclopentasiloxane, decamethyl Cyclohexasiloxane, dodecamethyl 4 Unknown TICs	 270(JN) 170(JN) 1100(J) to 2600(J)	Oil and grease TPH	145 142	Not Analyzed	
RDS-9	11/4/95	black stained oily sand	Not Detected		TICs: Cyclopentasiloxane, decamethyl Cyclohexasiloxane, dodecamethyl 8 Unknown TICs	 1100(JN) 530(JN) 190(J) to 3400(J)	Oil and grease TPH	< 25.0 < 25.0	Not Analyzed	
RDS-10	11/4/95	black stained sand	Not Detected		Naphthalene 2-Methylnaphthalene Acenaphthene Fluorene Phenanthrene Anthracene Fluoranthene Pyrene Benzo(a)anthracene bis(2-Ethylhexyl) phthalate Chrysene Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(a)pyrene Indeno(1,2,3-cd)pyrene Dibenz(a,h)anthracene Benzo(g,h,i)perylene TICs: Isomer of ethyldimethylbenzene Isomer of ethylnaphthalene 2 Isomers of methylpropylbenzene 4 Isomers of dimethylnaphthalene Isomer of dimethylphenanthrene 2 Isomers of trimethylbenzene 2 Isomers of C10H14 1 Isomer of C12H10 1 Unknown of C15H12 1 Isomer of C16H14 2 Unknowns of C17H12 1 Unknown PAH TIC 1 Unknown TIC	9900(E) 21000(E) 5300 2600 75000(E) 13000(E) 16000(E) 28000(E) 8800(E) 260(J) 8700(E) 8400(E) 1500 7500(E) 2000 1300 2500 6600(J) 3300(J) 2800(J) to 3500(J) 3300(J) to 4300(J) 5500(J) 2500(J) to 3300(J) 3900(J) to 4800(J) 4500(J) 4000(J) 2800(J) 2500(J) to 2900(J) 3500(J) 3200(J)	Oil and grease TPH	115 94.9	Not Analyzed	

**TABLE 7
RUBBLE DUMP SITE
ANALYTICAL RESULTS**

Sample ID Number	Date Sampled	Sample Description	Volatile Organic Compounds EPA SW 846 Method 8260		Semi-Volatile Organic Compounds EPA SW 846 Method 8270		Oil and Grease Total Petroleum Hydrocarbons		Asbestos	
			Constituent	(u/gkg)	Constituent	(ug/kg)	Constituent	mg/kg (dry)	Constituent	(%)
RDS-11	11/4/95	gray to black stained sand	TICs: Cyclotetrasiloxane, octameth	15(J)	Acenaphthylene Acenaphthene Fluorene Phenanthrene Anthracene	14000(J) 5400(J) 8000(J) 8800(J) 8800(J)	Oil and grease TPH	2030 2030	Not Analyzed	
					TICs: 1,1'-(1,3-propanediyl)bis-b isomer of C8H8 5 Unknown hydrocarbon TICs 13 Unknown TICs	250000(JN) 230000(J) 180000(J) to 770000(J) 83000(J) to 1700000(J)				
RDS-12	11/4/95	shingles	Not Analyzed		Not Analyzed		Not Analyzed		Not Detected	
RDS-13	11/4/95	shingles	Not Analyzed		Not Analyzed		Not Analyzed		Not Detected	
RDS-14	11/4/95	shingles	Not Analyzed		Not Analyzed		Not Analyzed		Not Detected	
RDS-15	11/4/95	shingles	Not Analyzed		Not Analyzed		Not Analyzed		Not Detected	
RDS-16	11/4/95	shingles	Not Analyzed		Not Analyzed		Not Analyzed		Not Detected	
RDS-17	11/4/95	shingles	Not Analyzed		Not Analyzed		Not Analyzed		Not Detected	
RDS-18	11/4/95	shingles	Not Analyzed		Not Analyzed		Not Analyzed		Not Detected	
RDS-19	11/4/95	floor tiles	Not Analyzed		Not Analyzed		Not Analyzed		Chrysotile	25
RDS-20	11/4/95	shingles	Not Analyzed		Not Analyzed		Not Analyzed		Not Detected	
RDS-21	11/4/95	floor tiles	Not Analyzed		Not Analyzed		Not Analyzed		Chrysotile	80
RDS-22	11/4/95	ceiling tile	Not Analyzed		Not Analyzed		Not Analyzed		Not Detected	
RDS-23	11/4/95	unknown	Not Analyzed		Not Analyzed		Not Analyzed		Not Detected	
RDS-24	11/4/95	unknown	Not Analyzed		Not Analyzed		Not Analyzed		Not Detected	
RDS-25	11/10/95	black stained sand	Naphthalene	7	bis(2-Ethylhexyl) phthalate	2800	Oil and grease TPH	7890 3700	Not Analyzed	
			TICs: Cyclotetrasiloxane, octameth	5(J)	TICs: Cyclopentasiloxane, decamethyl	330(JN)				
			1 Unknown TIC	31(J)	19 Unknown TICs	290(J) to 31000(J)				
RDS-26	11/10/95	black stained sand	Naphthalene	5(J)	Butylbenzylphthalate	1700	Oil and grease TPH	798 775	Not Analyzed	
			TICs: Cyclotetrasiloxane, octameth	12(J)	bis(2-Ethylhexyl) phthalate	770				
			2 Unknown TICs	5(J) to 72(J)	TICs: 12 Unknown TICs	150(J) to 890(J)				
RDS-27	11/10/95	black stained sand	TICs: Cyclotetrasiloxane, octameth	10(J)	bis(2-Ethylhexyl) phthalate	78(J)	Oil and grease TPH	70.6 64.7	Not Analyzed	
					TICs: Cyclopentasiloxane, decamethyl Cyclohexasiloxane, dodecamethyl 12 Unknown TICs	330(JN) 290(JN) 150(J) to 1900(J)				
RDS-28	11/10/95	black stained sand	TICs: Cyclotetrasiloxane, octameth	23(J)	bis(2-Ethylhexyl) phthalate	160(J)	Oil and grease TPH	49.7 42.7	Not Analyzed	
			2 Unknown TICs	11(J) to 17	TICs: 1 Unknown acid methyl ester 8 Unknown TICs	400(J) 160(J) to 1600(J)				
RDS-29	11/10/95	trip blank	Methylene Chloride	230(E)	Not Analyzed		Not Analyzed		Not Analyzed	

Organic Qualifiers:

(J) indicates an estimated value.

(N) indicates presumptive evidence of a compound. This flag is used only for TICs.

(E) is used to identify compounds whose concentrations exceed the calibration range of the GC MS instrument for that specific analysis.

TABLE 8
RUBBLE DUMP SITE
COMPARISON WITH TNRCC AND EPA STANDARDS

Sample ID Number	Sample Description	Contaminant		SAI-Res [¥]	SAI-Ind [§]	RSOIL [£]	CSOIL [■]
		Constituent	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
RDS-10	black stained sand	benzo[a]anthracene	8.80E+00	nr	nr	8.80E-01	7.80E+00
		benzo[b]fluoranthene	8.40E+00	nr	nr	8.80E-01	7.80E+00
		benzo[a]pyrene	7.50E+00	nr	nr	8.80E-02	7.80E-01
		indeno[1,2,3-cd]pyrene	2.00E+00	nr	nr	8.80E-01	7.80E+00
		dibenz[a,h]anthracene	1.30E+00	nr	nr	8.80E-02	7.80E-01

¥ - soil/air and ingestion standard for residential use (TNRCC)

§ - soil/air and ingestion standard for industrial use (TNRCC)

£ - residential soil (EPA)

■ - commercial/industrial soil (EPA)

nr - not reported

B3 - Rubble Dump Site

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

RSD29

Lab Name: EA LABORATORIES Contract: _____
 Lab Code: EA ENG Case No.: _____ Method: 8260 SDG No.: _____
 Matrix: (soil/water) WATER Lab Sample ID: 9516203
 Sample wt/vol: 5.0 (g/mL) ML Lab File ID: VE5A6455.D
 Level: (low/med) _____ Date Received: 11/11/95
 % Moisture: not dec. 0 Date Analyzed: 11/18/95
 GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0
 Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 0 Concentration Units:
 (ug/L or ug/Kg) ug/L

CAS Number	Compound Name	RT	Est. Conc.	Q
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RSD29

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ Method: 8260 SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 9516203

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: VE5A6455.D

Level: (low/med) _____ Date Received: 11/11/95

% Moisture: not dec. 0 Date Analyzed: 11/18/95

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Concentration Units:

CAS No.	Compound	(ug/L or ug/Kg)	ug/L	Q
75-71-8	Dichlorodifluoromethane	5		U
74-87-3	Chloromethane	5		U
75-01-4	Vinyl Chloride	5		U
74-83-9	Bromomethane	5		U
75-00-3	Chloroethane	5		U
75-69-4	Trichlorofluoromethane	5		U
75-35-4	1,1-Dichloroethene	5		U
75-09-2	Methylene Chloride	230		E
156-60-5	trans-1,2-Dichloroethene	5		U
75-34-3	1,1-Dichloroethane	5		U
594-20-7	2,2-Dichloropropane	5		U
156-59-2	cis-1,2-Dichloroethene	5		U
67-66-3	Chloroform	5		U
74-97-5	Bromochloromethane	5		U
71-55-6	1,1,1-Trichloroethane	5		U
563-58-6	1,1-Dichloropropene	5		U
56-23-5	Carbon Tetrachloride	5		U
107-06-2	1,2-Dichloroethane	5		U
71-43-2	Benzene	5		U
79-01-6	Trichloroethene	5		U
78-87-5	1,2-Dichloropropane	5		U
75-27-4	Bromodichloromethane	5		U
74-95-3	Dibromomethane	5		U
108-88-3	Toluene	5		U
79-00-5	1,1,2-Trichloroethane	5		U
106-93-4	1,2-Dibromoethane (EDB)	5		U
142-28-9	1,3-Dichloropropane	5		U
127-18-4	Tetrachloroethene	5		U
124-48-1	Chlorodibromomethane	5		U
108-90-7	Chlorobenzene	5		U
630-20-6	1,1,1,2-Tetrachloroethane	5		U
100-41-4	Ethylbenzene	5		U
106-42-3	m&p Xylenes	5		U

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO:

RDS-28

Lab Name: EA LABS

Contract:

Lab Code: EAENG

Case No:

SAS No.: _____

SDG No:

Matrix: (soil/water) SOIL

Lab Sample ID: 9516202

Sample wt/vol: 30.0 (g/ml) G

Lab File ID: SA1A7165

Level: (low/med) LOW

Date Received: 11/07/95

% Moisture: 4 decanted: (Y/N) N

Date Extracted: 11/14/95

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 11/20/95

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N)N pH: _____

Number TICS found: 9

CONCENTRATION UNITS
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.-----	Unknown	4.31	160	J
2.-----	Unknown	9.44	290	J
3.-----	Unknown	10.67	220	J
4.-----	Unknown acid methyl ester	17.40	400	J
5.-----	Unknown	17.77	1600	J
6.-----	Unknown	18.55	1200	J
7.-----	Unknown	18.59	530	J
8.-----	Unknown	19.48	540	J
9.-----	Unknown	20.94	510	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

RDS-28

Lab Name: EA LABS

Contract:

Lab Code: EAENG

Case No:

SAS No.: _____

SDG No:

Matrix: (soil/water) SOIL

Lab Sample ID: 9516202

Sample wt/vol: 30.0 (g/ml) G

Lab File ID: SA1A7165

Level: (low/med) LOW

Date Received: 11/07/95

% Moisture: 4 decanted: (Y/N) N

Date Extracted: 11/14/95

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 11/20/95

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
---------	----------	---	---

108-95-2-----	Phenol	340	U
111-44-4-----	bis(2-Chloroethyl) ether	340	U
95-57-8-----	2-Chlorophenol	340	U
541-73-1-----	1,3-Dichlorobenzene	340	U
106-46-7-----	1,4-Dichlorobenzene	340	U
100-51-6-----	Benzyl Alcohol	340	U
95-50-1-----	1,2-Dichlorobenzene	340	U
95-48-7-----	2-Methylphenol	340	U
108-60-1-----	2,2'-oxybis(1-Chloropropane)	340	U
106-44-5-----	4-Methylphenol	340	U
621-64-7-----	N-Nitroso-Di-n-propylamine	340	U
67-72-1-----	Hexachloroethane	340	U
98-95-3-----	Nitrobenzene	340	U
78-59-1-----	Isophorone	340	U
88-75-5-----	2-Nitrophenol	340	U
105-67-9-----	2,4-Dimethylphenol	340	U
65-85-0-----	Benzoic acid	1800	U
111-91-1-----	bis(2-Chloroethoxy) methane	340	U
120-83-2-----	2,4-Dichlorophenol	340	U
120-82-1-----	1,2,4-Trichlorobenzene	340	U
91-20-3-----	Naphthalene	340	U
106-47-8-----	4-Chloroaniline	340	U
87-68-3-----	Hexachlorobutadiene	340	U
59-50-7-----	4-Chloro-3-methylphenol	340	U
91-57-6-----	2-Methylnaphthalene	340	U
77-47-4-----	Hexachlorocyclopentadiene	340	U
88-06-2-----	2,4,6-Trichlorophenol	340	U
95-95-4-----	2,4,5-Trichlorophenol	1800	U
91-58-7-----	2-Chloronaphthalene	340	U
88-74-4-----	2-Nitroaniline	1800	U
131-11-3-----	Dimethylphthalate	340	U
208-96-8-----	Acenaphthylene	340	U
99-09-2-----	3-Nitroaniline	1800	U
83-32-9-----	Acenaphthene	340	U
51-28-5-----	2,4-Dinitrophenol	1800	U

FORM I SV-1

3/90

050713

Reference for ms/msd
was 12/1/95

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RDS28

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ Method: 8260 SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 9516202

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VH8A7170.D

Level: (low/med) LOW Date Received: 11/11/95

% Moisture: not dec. 4 Date Analyzed: 11/22/95

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Concentration Units:

CAS No.	Compound	(ug/L or ug/Kg)	<u>ug/Kg</u>	Q
95-47-6	o-Xylene	5		U
100-42-5	Styrene	5		U
75-25-2	Bromoform	5		U
98-82-8	Isopropylbenzene	5		U
79-34-5	1,1,2,2-Tetrachloroethane	5		U
96-18-4	1,2,3-Trichloropropane	5		U
103-65-1	n-Propylbenzene	5		U
108-86-1	Bromobenzene	5		U
108-67-8	1,3,5-Trimethylbenzene	5		U
95-49-8	2-Chlorotoluene	5		U
106-43-4	4-Chlorotoluene	5		U
98-06-6	tert-Butylbenzene	5		U
95-63-6	1,2,4-Trimethylbenzene	5		U
135-98-8	sec-Butylbenzene	5		U
99-87-6	p-Isopropyltoluene	5		U
541-73-1	1,3-Dichlorobenzene	5		U
106-46-7	1,4-Dichlorobenzene	5		U
104-51-8	n-Butylbenzene	5		U
95-50-1	1,2-Dichlorobenzene	5		U
96-12-8	1,2-Dibromo-3-chloropropane	5		U
120-82-1	1,2,4-Trichlorobenzene	5		U
87-68-3	Hexachlorobutadiene	5		U
91-20-3	Naphthalene	5		U
87-61-6	1,2,3-Trichlorobenzene	5		U

FORM I
SAMPLE ANALYSIS RESULTS

Lab Name: EA Laboratories
Case No.: 9542025
Sample No.: RDS-27
Sample matrix: SOIL
Total Solids: 98.7%

Contract: FORTBLISS
SDG No.: 9516199
Lab Sample ID No.: 9516201
Date Received: 11/11/95

Lab ID	Parameter	Sample Conc.	Concentration Units	Analyzed Date
9516201	OIL AND GREASE	70.6	mg/kg (dry)	11/28/95
	TOT PETROL HYDROCARB	64.7	mg/kg (dry)	11/28/95

000005

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

RDS -27

Lab Name: EA LABS

Contract:

Lab Code: EAENG

Case No:

SAS No.: _____

SDG No:

Matrix: (soil/water) SOIL

Lab Sample ID: 9516201

Sample wt/vol: 30.0 (g/ml) G

Lab File ID: SA1A7164

Level: (low/med) LOW

Date Received: 11/11/95

% Moisture: 1 decanted: (Y/N) N

Date Extracted: 11/16/95

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 11/20/95

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NO.

COMPOUND

Q

100-02-7-----	4-Nitrophenol	1700	U
132-64-9-----	Dibenzofuran	330	U
121-14-2-----	2,4-Dinitrotoluene	330	U
606-20-2-----	2,6-Dinitrotoluene	330	U
84-66-2-----	Diethylphthalate	330	U
7005-72-3-----	4-Chlorophenyl-phenylether	330	U
86-73-7-----	Fluorene	330	U
100-01-6-----	4-Nitroaniline	1700	U
534-52-1-----	4,6-Dinitro-2-methylphenol	1700	U
86-30-6-----	N-Nitrosodiphenylamine	330	U
101-55-3-----	4-Bromophenyl-phenylether	330	U
118-74-1-----	Hexachlorobenzene	330	U
87-86-5-----	Pentachlorophenol	1700	U
85-01-8-----	Phenanthrene	330	U
120-12-7-----	Anthracene	330	U
84-74-2-----	Di-n-butyl phthalate	330	U
206-44-0-----	Fluoranthene	330	U
129-00-0-----	Pyrene	330	U
85-68-7-----	Butylbenzylphthalate	330	U
91-94-1-----	3,3'-Dichlorobenzidine	330	U
56-55-3-----	Benzo(a)anthracene	330	U
117-81-7-----	bis(2-Ethylhexyl)phthalate	78	J
218-01-9-----	Chrysene	330	U
117-84-0-----	Di-n-octyl phthalate	330	U
205-99-2-----	Benzo(b)fluoranthene	330	U
207-08-9-----	Benzo(k)fluoranthene	330	U
50-32-8-----	Benzo(a)pyrene	330	U
193-39-5-----	Indeno(1,2,3-cd)pyrene	330	U
53-70-3-----	Dibenz(a,h)anthracene	330	U
191-24-2-----	Benzo(g,h,i)perylene	330	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

RDS27

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ Method: 8260 SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 9516201

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VH8A7169.D

Level: (low/med) LOW Date Received: 11/11/95

% Moisture: not dec. 1 Date Analyzed: 11/22/95

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Concentration Units:

Number TICs found: 1 (ug/L or ug/Kg) ug/Kg

CAS Number	Compound Name	RT	Est. Conc.	Q
1. 556-67-2	Cyclotetrasiloxane, octameth	22.43	10	✓
2.				
3.				
4.				
5.				
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030049

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RDS27

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ Method: 8260 SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 9516201

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VH8A7169.D

Level: (low/med) LOW Date Received: 11/11/95

% Moisture: not dec. 1 Date Analyzed: 11/22/95

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Concentration Units:

CAS No.	Compound	(ug/L or ug/Kg)	ug/Kg	Q
75-71-8	Dichlorodifluoromethane	5		U
74-87-3	Chloromethane	5		U
75-01-4	Vinyl Chloride	5		U
74-83-9	Bromomethane	5		U
75-00-3	Chloroethane	5		U
75-69-4	Trichlorofluoromethane	5		U
75-35-4	1,1-Dichloroethene	5		U
75-09-2	Methylene Chloride	5		U
156-60-5	trans-1,2-Dichloroethene	5		U
75-34-3	1,1-Dichloroethane	5		U
594-20-7	2,2-Dichloropropane	5		U
156-59-2	cis-1,2-Dichloroethene	5		U
67-66-3	Chloroform	5		U
74-97-5	Bromochloromethane	5		U
71-55-6	1,1,1-Trichloroethane	5		U
563-58-6	1,1-Dichloropropene	5		U
56-23-5	Carbon Tetrachloride	5		U
107-06-2	1,2-Dichloroethane	5		U
71-43-2	Benzene	5		U
79-01-6	Trichloroethene	5		U
78-87-5	1,2-Dichloropropane	5		U
75-27-4	Bromodichloromethane	5		U
74-95-3	Dibromomethane	5		U
108-88-3	Toluene	5		U
79-00-5	1,1,2-Trichloroethane	5		U
106-93-4	1,2-Dibromoethane(EDB)	5		U
142-28-9	1,3-Dichloropropane	5		U
127-18-4	Tetrachloroethene	5		U
124-48-1	Chlorodibromomethane	5		U
108-90-7	Chlorobenzene	5		U
630-20-6	1,1,1,2-Tetrachloroethane	5		U
100-41-4	Ethylbenzene	5		U
106-42-3	m&p Xylenes	5		U

030047

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO:

RDS -26

Lab Name: EA LABS

Contract:

Code: EAENG

Case No:

SAS No.: _____

SDG No:

Matrix: (soil/water) SOIL

Lab Sample ID: 9516200

Sample wt/vol: 30.0 (g/ml) G

Lab File ID: SA1A7163

Level: (low/med) LOW

Date Received: 11/11/95

% Moisture: 4 decanted: (Y/N) N

Date Extracted: 11/16/95

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 11/20/95

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N)N pH: _____

Number TICS found: 12

CONCENTRATION UNITS
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.-----	Unknown	4.01	190	J
2.-----	Unknown	6.10	290	J
3.-----	Unknown	6.33	620	J
4.-----	Unknown	6.93	180	J
5.-----	Unknown	9.45	610	J
6.-----	Unknown	10.68	690	J
7.-----	Unknown	11.82	200	J
8.-----	Unknown	12.80	180	J
9.-----	Unknown	14.10	150	J
10.-----	Unknown	15.19	170	J
11.-----	Unknown	15.92	190	J
12.-----	Unknown	17.91	390	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

RDS -26

Name: EA LABS Contract: _____
 Lab Code: EAENG Case No: _____ SAS No.: _____ SDG No: _____
 Matrix: (soil/water) SOIL Lab Sample ID: 9516200
 Sample wt/vol: 30.0 (g/ml) G Lab File ID: SA1A7163
 Level: (low/med) LOW Date Received: 11/11/95
 % Moisture: 4 decanted: (Y/N) N Date Extracted: 11/16/95
 Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/20/95
 Injection Volume: 1.0 (uL) Dilution Factor: 1.0
 GPC Cleanup: (Y/N)N pH: _____

CONCENTRATION UNITS:
(ug/L or ug/Kg)ug/Kg

CAS NO.	COMPOUND	Q
108-95-2	Phenol	340 U
111-44-4	bis(2-Chloroethyl) ether	340 U
95-57-8	2-Chlorophenol	340 U
541-73-1	1,3-Dichlorobenzene	340 U
106-46-7	1,4-Dichlorobenzene	340 U
100-51-6	Benzyl Alcohol	340 U
95-50-1	1,2-Dichlorobenzene	340 U
95-48-7	2-Methylphenol	340 U
108-60-1	2,2'-oxybis(1-Chloropropane)	340 U
106-44-5	4-Methylphenol	340 U
621-64-7	N-Nitroso-Di-n-propylamine	340 U
67-72-1	Hexachloroethane	340 U
98-95-3	Nitrobenzene	340 U
78-59-1	Isophorone	340 U
88-75-5	2-Nitrophenol	340 U
105-67-9	2,4-Dimethylphenol	340 U
65-85-0	Benzoic acid	1800 U
111-91-1	bis(2-Chloroethoxy) methane	340 U
120-83-2	2,4-Dichlorophenol	340 U
120-82-1	1,2,4-Trichlorobenzene	340 U
91-20-3	Naphthalene	340 U
106-47-8	4-Chloroaniline	340 U
87-68-3	Hexachlorobutadiene	340 U
59-50-7	4-Chloro-3-methylphenol	340 U
91-57-6	2-Methylnaphthalene	340 U
77-47-4	Hexachlorocyclopentadiene	340 U
88-06-2	2,4,6-Trichlorophenol	340 U
95-95-4	2,4,5-Trichlorophenol	1800 U
91-58-7	2-Chloronaphthalene	340 U
88-74-4	2-Nitroaniline	1800 U
131-11-3	Dimethylphthalate	340 U
208-96-8	Acenaphthylene	340 U
99-09-2	3-Nitroaniline	1800 U
83-32-9	Acenaphthene	340 U
51-28-5	2,4-Dinitrophenol	1800 U

EPA SAMPLE NO.

RDS26

Contract:

SDG No.:

Lab Sample ID: 9516200

Lab File ID: VH8A7168.D

Date Received: 11/11/95

Date Analyzed: 11/22/95

Dilution Factor: 1.0

Soil Aliquot Volume: (uL)

(ug/L or ug/Kg)

ug/Kg

Q

030022

FORM I
SAMPLE ANALYSIS RESULTS

Name: EA Laboratories
Case No.: 9542025
Sample No.: RDS-25
Sample matrix: SOIL
Total Solids: 97.3%

Contract: FORTBLISS
SDG No.: 9516199
Lab Sample ID No.: 9516199
Date Received: 11/11/95

Lab ID	Parameter	Sample Conc.	Concentration Units	Analyzed Date
516199	OIL AND GREASE	7690	mg/kg (dry)	11/28/95
	TOT PETROL HYDROCARB	3700	mg/kg (dry)	11/28/95

000003

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

RDS -25

Lab Name: EA LABS

Contract:

Code: EAENG

Case No:

SAS No.: _____

SDG No:

Matrix: (soil/water) SOIL

Lab Sample ID: 9516199

Sample wt/vol: 30.0 (g/ml) G

Lab File ID: SA1A7162

Level: (low/med) LOW

Date Received: 11/11/95

% Moisture: 3 decanted: (Y/N) N

Date Extracted: 11/16/95

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 11/20/95

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N)N pH: _____

CONCENTRATION UNITS:
(ug/L or ug/Kg)ug/Kg

Q

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)ug/Kg	Q
100-02-7-----	4-Nitrophenol	1800	U
132-64-9-----	Dibenzofuran	340	U
121-14-2-----	2,4-Dinitrotoluene	340	U
606-20-2-----	2,6-Dinitrotoluene	340	U
84-66-2-----	Diethylphthalate	340	U
7005-72-3-----	4-Chlorophenyl-phenylether	340	U
86-73-7-----	Fluorene	340	U
100-01-6-----	4-Nitroaniline	1800	U
534-52-1-----	4,6-Dinitro-2-methylphenol	1800	U
86-30-6-----	N-Nitrosodiphenylamine	340	U
101-55-3-----	4-Bromophenyl-phenylether	340	U
118-74-1-----	Hexachlorobenzene	340	U
87-86-5-----	Pentachlorophenol	1800	U
85-01-8-----	Phenanthrene	340	U
120-12-7-----	Anthracene	340	U
84-74-2-----	Di-n-butyl phthalate	340	U
206-44-0-----	Fluoranthene	340	U
129-00-0-----	Pyrene	340	U
85-68-7-----	Butylbenzylphthalate	340	U
91-94-1-----	3,3'-Dichlorobenzidine	340	U
56-55-3-----	Benzo(a)anthracene	340	U
117-81-7-----	bis(2-Ethylhexyl)phthalate	2600	U
218-01-9-----	Chrysene	340	U
117-84-0-----	Di-n-octyl phthalate	340	U
205-99-2-----	Benzo(b)fluoranthene	340	U
207-08-9-----	Benzo(k)fluoranthene	340	U
50-32-8-----	Benzo(a)pyrene	340	U
193-39-5-----	Indeno(1,2,3-cd)pyrene	340	U
53-70-3-----	Dibenz(a,h)anthracene	340	U
191-24-2-----	Benzo(g,h,i)perylene	340	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

RDS25

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ Method: 8260 SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 9516199

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VH8A7165.D

Level: (low/med) LOW Date Received: 11/11/95

% Moisture: not dec. 3 Date Analyzed: 11/22/95

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Concentration Units:

Number TICs found: 2 (ug/L or ug/Kg) ug/Kg

CAS Number	Compound Name	RT	Est. Conc.	Q
1. 556-67-2	Cyclotetrasiloxane, octameth	22.43	5	J
2.	Unknown	25.91	31	J
3.				
4.				
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030011

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RDS25

Lab Name: EA LABORATORIES Contract: _____
 Lab Code: EA ENG Case No.: _____ Method: 8260 SDG No.: _____
 Matrix: (soil/water) SOIL Lab Sample ID: 9516199
 Sample wt/vol: 5.0 (g/mL) G Lab File ID: VH8A7165.D
 Level: (low/med) LOW Date Received: 11/11/95
 % Moisture: not dec. 3 Date Analyzed: 11/22/95
 GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0
 Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS No.	Compound	Concentration Units:		Q
		(ug/L or ug/Kg)	<u>ug/Kg</u>	
75-71-8	Dichlorodifluoromethane	5		U
74-87-3	Chloromethane	5		U
75-01-4	Vinyl Chloride	5		U
74-83-9	Bromomethane	5		U
75-00-3	Chloroethane	5		U
75-69-4	Trichlorofluoromethane	5		U
75-35-4	1,1-Dichloroethene	5		U
75-09-2	Methylene Chloride	5		U
156-60-5	trans-1,2-Dichloroethene	5		U
75-34-3	1,1-Dichloroethane	5		U
594-20-7	2,2-Dichloropropane	5		U
156-59-2	cis-1,2-Dichloroethene	5		U
67-66-3	Chloroform	5		U
74-97-5	Bromochloromethane	5		U
71-55-6	1,1,1-Trichloroethane	5		U
563-58-6	1,1-Dichloropropene	5		U
56-23-5	Carbon Tetrachloride	5		U
107-06-2	1,2-Dichloroethane	5		U
71-43-2	Benzene	5		U
79-01-6	Trichloroethene	5		U
78-87-5	1,2-Dichloropropane	5		U
75-27-4	Bromodichloromethane	5		U
74-95-3	Dibromomethane	5		U
108-88-3	Toluene	5		U
79-00-5	1,1,2-Trichloroethane	5		U
106-93-4	1,2-Dibromoethane(EDB)	5		U
142-28-9	1,3-Dichloropropane	5		U
127-18-4	Tetrachloroethene	5		U
124-48-1	Chlorodibromomethane	5		U
108-90-7	Chlorobenzene	5		U
630-20-6	1,1,1,2-Tetrachloroethane	5		U
100-41-4	Ethylbenzene	5		U
106-42-3	m&p Xylenes	5		U

030009

EA Laboratories
19 Loveton Circle
Sparks, MD 21152

Tuesday, November 14, 1995

Ref Number: W95753

POLARIZED LIGHT MICROSCOPY (PLM)

Project: 951757

SAMPLE	LOCATION	APPEARANCE	SAMPLE TREATMENT	ASBESTOS		NONASBESTOS		
				%	TYPE	%	FIBROUS	% NONFIBROUS
RDS-18		Black/Grey Fibrous Homogeneous	Teased		None Detected	35% 10%	Cellulose Synthetic	55% Other
RDS-19		Grey/Black Fibrous Layers # 2	Teased/Crushed	25%	Chrysotile	5% 2%	Cellulose Synthetic	68% Other
RDS-20		Black Fibrous Homogeneous	Teased		None Detected	10% 50%	Cellulose Glass	40% Other
RDS-21		Grey/Black Fibrous Homogeneous	Teased	60%	Chrysotile	3% 2%	Cellulose Synthetic	35% Other
RDS-22		Tan/Beige Fibrous Homogeneous	Teased		None Detected	65% 10%	Cellulose Synthetic	25% Other
RDS-23		Brown Fibrous Homogeneous	Teased		None Detected	70% 5%	Cellulose Synthetic	25% Other

Comments: For all obviously heterogeneous samples easily separated into subsamples, and for layered samples, each component is analyzed separately. Also, "# of Layers" refers to number of separable subsamples.

Essie J. Spencer

Essie J. Spencer
Analyst

Laboratory
Supervisor

James J. Spencer
Other Approved
Signatory

070002

Disclaimers: PLM has been known to miss asbestos in a small percentage of samples which contain asbestos. Thus negative PLM results cannot be guaranteed. Floor tiles and wipes should be tested with either SEM or TEM. The above test report relates only to the items tested. This report may only be reproduced in full with written approval by EMSL. The above test must not be used by the client to claim product endorsement by NVLAP nor any agency of the United States Government. All "NVLAP" reports with NVLAP logo must contain at least one signature to be valid. Laboratory is not responsible for the accuracy of results when requested to physically separate and analyze layered samples.

FORM I
SAMPLE ANALYSIS RESULTS

Lab Name: EA Laboratories
Case No.: 9542025
Sample No.: RDS-11
Sample matrix: SOIL
Total Solids: 97.4%

Contract: FORTBLISS
SDG No.: 9516032
Lab Sample ID No.: 9516050
Date Received: 11/07/95

Lab ID	Parameter	Sample Conc.	Concentration Units	Analyzed Date
9516050	OIL AND GREASE	2030	mg/kg (dry)	11/28/95
	TOT PETROL HYDROCARB	2030	mg/kg (dry)	11/28/95

060018

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

RDS-11RE

Lab Name: EA LABS

Contract:

Lab Code: EAENG

Case No:

SAS No.: _____

SDG No:

Matrix: (soil/water) SOIL

Lab Sample ID: 9516050

Sample wt/vol: 30.0 (g/ml) G

Lab File ID: SA1A7209

Level: (low/med) LOW

Date Received: 11/07/95

% Moisture: 3 decanted: (Y/N) N

Date Extracted: 11/14/95

Concentrated Extract Volume: 50000 (uL)

Date Analyzed: 11/23/95

Injection Volume: 1.0 (uL)

Dilution Factor: 50.0

GPC Cleanup: (Y/N)N pH: _____

CONCENTRATION UNITS:
(ug/L or ug/Kg)ug/Kg

Q

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)ug/Kg	Q
100-02-7-----	4-Nitrophenol	88000	U
132-64-9-----	Dibenzofuran	17000	U
121-14-2-----	2,4-Dinitrotoluene	17000	U
606-20-2-----	2,6-Dinitrotoluene	17000	U
84-66-2-----	Diethylphthalate	17000	U
7005-72-3-----	4-Chlorophenyl-phenylether	17000	U
86-73-7-----	Fluorene	12000	J
100-01-6-----	4-Nitroaniline	88000	U
534-52-1-----	4,6-Dinitro-2-methylphenol	88000	U
86-30-6-----	N-Nitrosodiphenylamine	17000	U
101-55-3-----	4-Bromophenyl-phenylether	17000	U
118-74-1-----	Hexachlorobenzene	17000	U
87-86-5-----	Pentachlorophenol	88000	U
85-01-8-----	Phenanthrene	11000	J
120-12-7-----	Anthracene	16000	J
84-74-2-----	Di-n-butyl phthalate	17000	U
206-44-0-----	Fluoranthene	17000	U
129-00-0-----	Pyrene	17000	U
85-68-7-----	Butylbenzylphthalate	17000	U
91-94-1-----	3,3'-Dichlorobenzidine	17000	U
56-55-3-----	Benzo(a)anthracene	17000	U
117-81-7-----	bis(2-Ethylhexyl)phthalate	17000	U
218-01-9-----	Chrysene	17000	U
117-84-0-----	Di-n-octyl phthalate	17000	U
205-99-2-----	Benzo(b)fluoranthene	17000	U
207-08-9-----	Benzo(k)fluoranthene	17000	U
50-32-8-----	Benzo(a)pyrene	17000	U
193-39-5-----	Indeno(1,2,3-cd)pyrene	17000	U
53-70-3-----	Dibenz(a,h)anthracene	17000	U
191-24-2-----	Benzo(g,h,i)perylene	17000	U

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO:

RDS-11

Lab Name: EA LABS

Contract:

Code: EAENG

Case No:

SAS No.: _____

SDG No:

Matrix: (soil/water) SOIL

Lab Sample ID: 9516050

Sample wt/vol: 30.0 (g/ml) G

Lab File ID: SA1A7208

Level: (low/med) LOW

Date Received: 11/07/95

% Moisture: 3 decanted: (Y/N) N

Date Extracted: 11/14/95

Concentrated Extract Volume: 50000 (uL)

Date Analyzed: 11/23/95

Injection Volume: 1.0 (uL)

Dilution Factor: 50.0

GPC Cleanup: (Y/N)N pH: _____

Number TICS found: 20

CONCENTRATION UNITS
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.-----	Isomers of C8H8	5.59	230000	J
2.1081-75-0---	1,1'-(1,3-propanediyl)bis-b	15.00	250000	JN
3.-----	Unknown	15.62	240000	J
4.-----	Unknown	15.67	86000	J
5.-----	Unknown hydrocarbon	20.19	180000	J
6.-----	Unknown	20.86	180000	J
7.-----	Unknown	21.40	1700000	J
8.-----	Unknown hydrocarbon	21.57	310000	J
9.-----	Unknown	22.03	520000	J
10.-----	Unknown	22.12	770000	J
11.-----	Unknown	22.17	320000	J
12.-----	Unknown	22.23	310000	J
13.-----	Unknown hydrocarbon	22.85	770000	J
14.-----	Unknown	23.44	170000	J
15.-----	Unknown hydrocarbon	24.07	530000	J
16.-----	Unknown	24.74	240000	J
17.-----	Unknown	25.38	83000	J
18.-----	Unknown hydrocarbon	25.57	350000	J
19.-----	Unknown	26.48	170000	J
20.-----	Unknown	27.37	400000	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

RDS-11

Lab Name: EA LABS

Contract:

Lab Code: EAENG

Case No:

SAS No.: _____

SDG No:

Matrix: (soil/water) SOIL

Lab Sample ID: 9516050

Sample wt/vol: 30.0 (g/ml) G

Lab File ID: SA1A7208

Level: (low/med) LOW

Date Received: 11/07/95

% Moisture: 3 decanted: (Y/N) N

Date Extracted: 11/14/95

Concentrated Extract Volume: 50000 (uL)

Date Analyzed: 11/23/95

Injection Volume: 1.0 (uL)

Dilution Factor: 50.0

GPC Cleanup: (Y/N)N pH: _____

CAS NO.

COMPOUND

CONCENTRATION UNITS:
(ug/L or ug/Kg)ug/Kg

Q

108-95-2-----	Phenol	17000	U
111-44-4-----	bis(2-Chloroethyl)ether	17000	U
95-57-8-----	2-Chlorophenol	17000	U
541-73-1-----	1,3-Dichlorobenzene	17000	U
106-46-7-----	1,4-Dichlorobenzene	17000	U
100-51-6-----	Benzyl Alcohol	17000	U
95-50-1-----	1,2-Dichlorobenzene	17000	U
95-48-7-----	2-Methylphenol	17000	U
108-60-1-----	2,2'-oxybis(1-Chloropropane)	17000	U
106-44-5-----	4-Methylphenol	17000	U
621-64-7-----	N-Nitroso-Di-n-propylamine	17000	U
67-72-1-----	Hexachloroethane	17000	U
98-95-3-----	Nitrobenzene	17000	U
78-59-1-----	Isophorone	17000	U
88-75-5-----	2-Nitrophenol	17000	U
105-67-9-----	2,4-Dimethylphenol	17000	U
65-85-0-----	Benzoic acid	88000	U
111-91-1-----	bis(2-Chloroethoxy)methane	17000	U
120-83-2-----	2,4-Dichlorophenol	17000	U
120-82-1-----	1,2,4-Trichlorobenzene	17000	U
91-20-3-----	Naphthalene	17000	U
106-47-8-----	4-Chloroaniline	17000	U
87-68-3-----	Hexachlorobutadiene	17000	U
59-50-7-----	4-Chloro-3-methylphenol	17000	U
91-57-6-----	2-Methylnaphthalene	17000	U
77-47-4-----	Hexachlorocyclopentadiene	17000	U
88-06-2-----	2,4,6-Trichlorophenol	17000	U
95-95-4-----	2,4,5-Trichlorophenol	88000	U
91-58-7-----	2-Chloronaphthalene	17000	U
88-74-4-----	2-Nitroaniline	88000	U
131-11-3-----	Dimethylphthalate	17000	U
208-96-8-----	Acenaphthylene	14000	J
99-09-2-----	3-Nitroaniline	88000	U
83-32-9-----	Acenaphthene	5400	J
51-28-5-----	2,4-Dinitrophenol	88000	U

EPA SAMPLE NO.

FORM I
SAMPLE ANALYSIS RESULTS

Lab Name: EA Laboratories
Case No.: 9542025
Sample No.: RDS-10
Sample matrix: SOIL
Total Solids: 98.7%

Contract: FORTBLISS
SDG No.: 9516032
Lab Sample ID No.: 9516049
Date Received: 11/07/95

Lab ID	Parameter	Sample Conc.	Concentration Units	Analyzed Date
9516049	OIL AND GREASE	115	mg/kg (dry)	11/28/95
	TOT PETROL HYDROCARB	94.9	mg/kg (dry)	12/01/95

060017

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

RDS-10DL

Lab Name: EA LABS

Contract:

Code: EAENG

Case No:

SAS No.: _____

SDG No:

Matrix: (soil/water) SOIL

Lab Sample ID: 9516049

Sample wt/vol: 30.0 (g/ml) G

Lab File ID: SA1A7205

Level: (low/med) LOW

Date Received: 11/07/95

% Moisture: 1 decanted: (Y/N) N

Date Extracted: 11/14/95

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 11/22/95

Injection Volume: 1.0 (uL)

Dilution Factor: 50.0

GPC Cleanup: (Y/N)N pH: _____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)ug/Kg	Q
---------	----------	--	---

100-02-7-----	4-Nitrophenol	86000	U
132-64-9-----	Dibenzofuran	17000	U
121-14-2-----	2,4-Dinitrotoluene	17000	U
606-20-2-----	2,6-Dinitrotoluene	17000	U
84-66-2-----	Diethylphthalate	17000	U
7005-72-3-----	4-Chlorophenyl-phenylether	17000	U
86-73-7-----	Fluorene	33000	D
100-01-6-----	4-Nitroaniline	86000	U
534-52-1-----	4,6-Dinitro-2-methylphenol	86000	U
86-30-6-----	N-Nitrosodiphenylamine	17000	U
101-55-3-----	4-Bromophenyl-phenylether	17000	U
118-74-1-----	Hexachlorobenzene	17000	U
87-86-5-----	Pentachlorophenol	86000	U
85-01-8-----	Phenanthrene	230000	D
120-12-7-----	Anthracene	34000	D
84-74-2-----	Di-n-butyl phthalate	17000	U
206-44-0-----	Fluoranthene	38000	D
129-00-0-----	Pyrene	110000	D
85-68-7-----	Butylbenzylphthalate	17000	U
91-94-1-----	3,3'-Dichlorobenzidine	17000	U
56-55-3-----	Benzo(a)anthracene	21000	D
117-81-7-----	bis(2-Ethylhexyl)phthalate	17000	U
218-01-9-----	Chrysene	29000	D
117-84-0-----	Di-n-octyl phthalate	17000	U
205-99-2-----	Benzo(b)fluoranthene	7700	DJ
207-08-9-----	Benzo(k)fluoranthene	17000	U
50-32-8-----	Benzo(a)pyrene	8300	DJ
193-39-5-----	Indeno(1,2,3-cd)pyrene	17000	U
53-70-3-----	Dibenz(a,h)anthracene	17000	U
191-24-2-----	Benzo(g,h,i)perylene	17000	U

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO:

RDS-10RE

Lab Name: EA LABS

Contract:

Code: EAENG

Case No:

SAS No.: _____

SDG No:

Matrix: (soil/water) SOIL

Lab Sample ID: 9516049

Sample wt/vol: 30.0 (g/ml) G

Lab File ID: SA1A7207

Level: (low/med) LOW

Date Received: 11/07/95

% Moisture: 1 decanted: (Y/N) N

Date Extracted: 11/14/95

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 11/23/95

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

CONCENTRATION UNITS
(ug/L or ug/Kg) ug/Kg

Number TICS found: 20

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.-----	Isomers of trimethylbenzene_	7.10	2500	J
2.-----	Isomers of C9H12	7.50	3300	J
3.-----	Isomers of methylpropylbenze	7.89	3600	J
4.-----	Isomers of ethyldimethylbenz	7.98	6800	J
5.-----	Isomers of ethyldimethylbenz	8.24	4400	J
6.-----	Isomers of C10H14	8.29	4200	J
7.-----	Unknown C10H14	8.58	1600	J
8.-----	Isomers of C12H10	12.18	4500	J
9.-----	Isomers of ethylnaphthalene_	12.36	3100	J
10.-----	Isomers of dimethylnaphthale	12.51	4600	J
11.-----	Isomers of dimethylnaphthale	12.68	3900	J
12.-----	Isomers of dimethylnaphthale	12.93	4100	J
13.-----	Isomers of dimethylnaphthale	13.10	3900	J
14.-----	Isomers of trimethylnaphthal	14.04	2000	J
15.-----	Isomers of trimethylnaphthal	14.23	2700	J
16.-----	Unknown	19.51	1500	J
17.-----	Unknown PAH (C17H12)	19.80	2900	J
18.-----	Unknown PAH (C17H12)	19.99	1700	J
19.-----	Unknown PAH (C17H12)	20.41	2100	J
20.-----	Unknown PAH (C17H12)	20.47	1800	J

605...
12/1/95

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

RDS-10RE

Lab Name: EA LABS

Contract:

Lab Code: EAENG

Case No:

SAS No.: _____

SDG No:

Matrix: (soil/water) SOIL

Lab Sample ID: 9516049

Sample wt/vol: 30.0 (g/ml) G

Lab File ID: SA1A7207

Level: (low/med) LOW

Date Received: 11/07/95

% Moisture: 1 decanted: (Y/N) N

Date Extracted: 11/14/95

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 11/23/95

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)ug/Kg	Q
---------	----------	--	---

108-95-2-----	Phenol	140	J
111-44-4-----	bis(2-Chloroethyl)ether	330	U
95-57-8-----	2-Chlorophenol	330	U
541-73-1-----	1,3-Dichlorobenzene	330	U
106-46-7-----	1,4-Dichlorobenzene	330	U
100-51-6-----	Benzyl Alcohol	330	U
95-50-1-----	1,2-Dichlorobenzene	330	U
95-48-7-----	2-Methylphenol	330	U
108-60-1-----	2,2'-oxybis(1-Chloropropane)	330	U
106-44-5-----	4-Methylphenol	180	J
621-64-7-----	N-Nitroso-Di-n-propylamine	330	U
67-72-1-----	Hexachloroethane	330	U
98-95-3-----	Nitrobenzene	330	U
78-59-1-----	Isophorone	330	U
88-75-5-----	2-Nitrophenol	330	U
105-67-9-----	2,4-Dimethylphenol	330	U
65-85-0-----	Benzoic acid	1700	U
111-91-1-----	bis(2-Chloroethoxy)methane	330	U
120-83-2-----	2,4-Dichlorophenol	330	U
120-82-1-----	1,2,4-Trichlorobenzene	330	U
91-20-3-----	Naphthalene	13000	E
106-47-8-----	4-Chloroaniline	330	U
87-68-3-----	Hexachlorobutadiene	330	U
59-50-7-----	4-Chloro-3-methylphenol	330	U
91-57-6-----	2-Methylnaphthalene	22000	E
77-47-4-----	Hexachlorocyclopentadiene	330	U
88-06-2-----	2,4,6-Trichlorophenol	330	U
95-95-4-----	2,4,5-Trichlorophenol	1700	U
91-58-7-----	2-Chloronaphthalene	330	U
88-74-4-----	2-Nitroaniline	1700	U
131-11-3-----	Dimethylphthalate	330	U
208-96-8-----	Acenaphthylene	330	U
99-09-2-----	3-Nitroaniline	1700	U
83-32-9-----	Acenaphthene	9500	E
51-28-5-----	2,4-Dinitrophenol	1700	U

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

RDS-10

Lab Name: EA LABS

Contract:

Code: EAENG

Case No:

SAS No.: _____

SDG No:

Matrix: (soil/water) SOIL

Lab Sample ID: 9516049

Sample wt/vol: 30.0 (g/ml) G

Lab File ID: SA1A7168

Level: (low/med) LOW

Date Received: 11/07/95

% Moisture: 1 decanted: (Y/N) N

Date Extracted: 11/14/95

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 11/20/95

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N)N pH: _____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)ug/Kg	Q
---------	----------	--	---

100-02-7-----	4-Nitrophenol	1700	U
132-64-9-----	Dibenzofuran	330	U
121-14-2-----	2,4-Dinitrotoluene	330	U
606-20-2-----	2,6-Dinitrotoluene	330	U
84-66-2-----	Diethylphthalate	330	U
7005-72-3-----	4-Chlorophenyl-phenylether	330	U
86-73-7-----	Fluorene	2600	
100-01-6-----	4-Nitroaniline	1700	U
534-52-1-----	4,6-Dinitro-2-methylphenol	1700	U
86-30-6-----	N-Nitrosodiphenylamine	330	U
101-55-3-----	4-Bromophenyl-phenylether	330	U
118-74-1-----	Hexachlorobenzene	330	U
87-86-5-----	Pentachlorophenol	1700	U
85-01-8-----	Phenanthrene	75000	E
120-12-7-----	Anthracene	13000	E
84-74-2-----	Di-n-butyl phthalate	330	U
206-44-0-----	Fluoranthene	16000	E
129-00-0-----	Pyrene	28000	E
85-68-7-----	Butylbenzylphthalate	330	U
91-94-1-----	3,3'-Dichlorobenzidine	330	U
56-55-3-----	Benzo(a)anthracene	8800	E
117-81-7-----	bis(2-Ethylhexyl)phthalate	260	J
218-01-9-----	Chrysene	8700	E
117-84-0-----	Di-n-octyl phthalate	330	U
205-99-2-----	Benzo(b)fluoranthene	8400	E
207-08-9-----	Benzo(k)fluoranthene	1500	
50-32-8-----	Benzo(a)pyrene	7500	E
193-39-5-----	Indeno(1,2,3-cd)pyrene	2000	
53-70-3-----	Dibenz(a,h)anthracene	1300	
191-24-2-----	Benzo(g,h,i)perylene	2500	

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

RDS10

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ Method: 8260 SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 9516049

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VE5A6443.D

Level: (low/med) LOW Date Received: 11/7/95

% Moisture: not dec. 1 Date Analyzed: 11/17/95

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Concentration Units:

Number TICs found: 0 (ug/L or ug/Kg) ug/Kg

CAS Number	Compound Name	RT	Est. Conc.	Q
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

030176

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RDS10

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ Method: 8260 SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 9516049

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VE5A6443.D

Level: (low/med) LOW Date Received: 11/7/95

% Moisture: not dec. 1 Date Analyzed: 11/17/95

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Concentration Units:

CAS No.	Compound	(ug/L or ug/Kg)	ug/Kg	Q
75-71-8	Dichlorodifluoromethane	5		U
74-87-3	Chloromethane	5		U
75-01-4	Vinyl Chloride	5		U
74-83-9	Bromomethane	5		U
75-00-3	Chloroethane	5		U
75-69-4	Trichlorofluoromethane	5		U
75-35-4	1,1-Dichloroethene	5		U
75-09-2	Methylene Chloride	5		U
156-60-5	trans-1,2-Dichloroethene	5		U
75-34-3	1,1-Dichloroethane	5		U
594-20-7	2,2-Dichloropropane	5		U
156-59-2	cis-1,2-Dichloroethene	5		U
67-66-3	Chloroform	5		U
74-97-5	Bromochloromethane	5		U
71-55-6	1,1,1-Trichloroethane	5		U
563-58-6	1,1-Dichloropropene	5		U
56-23-5	Carbon Tetrachloride	5		U
107-06-2	1,2-Dichloroethane	5		U
71-43-2	Benzene	5		U
79-01-6	Trichloroethene	5		U
78-87-5	1,2-Dichloropropane	5		U
75-27-4	Bromodichloromethane	5		U
74-95-3	Dibromomethane	5		U
108-88-3	Toluene	5		U
79-00-5	1,1,2-Trichloroethane	5		U
106-93-4	1,2-Dibromoethane(EDB)	5		U
142-28-9	1,3-Dichloropropane	5		U
127-18-4	Tetrachloroethene	5		U
124-48-1	Chlorodibromomethane	5		U
108-90-7	Chlorobenzene	5		U
630-20-6	1,1,1,2-Tetrachloroethane	5		U
100-41-4	Ethylbenzene	5		U
106-42-3	m&p Xylenes	5		U

030174

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO:

RDS-9

Lab Name: EA LABS

Contract:

Lab Code: EAENG

Case No:

SAS No.: _____

SDG No:

Matrix: (soil/water) SOIL

Lab Sample ID: 9516048

Sample wt/vol: 30.0 (g/ml) G

Lab File ID: SA1A7161

Level: (low/med) LOW

Date Received: 11/07/95

% Moisture: 1 decanted: (Y/N) N

Date Extracted: 11/14/95

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 11/20/95

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N

pH: _____

CONCENTRATION UNITS
(ug/L or ug/Kg) ug/Kg

Number TICS found: 10

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.541-02-6----	Cyclopentasiloxane, <u>decamethyl-</u>	8.94	1100	JN
2.540-97-6----	Cyclohexasiloxane, <u>dodecamethyl-</u>	11.02	530	JN
3.-----	Unknown	18.55	3400	J
4.-----	Unknown	18.58	1500	J
5.-----	Unknown	18.72	210	J
6.-----	Unknown	19.22	210	J
7.-----	Unknown	19.48	1800	J
8.-----	Unknown	20.10	250	J
9.-----	Unknown	20.62	190	J
10.-----	Unknown	20.93	1500	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

RDS-9

Lab Name: EA LABS

Contract:

Code: EAENG

Case No:

SAS No.: _____

SDG No:

Matrix: (soil/water) SOIL

Lab Sample ID: 9516048

Sample wt/vol: 30.0 (g/ml) G

Lab File ID: SA1A7161

Level: (low/med) LOW

Date Received: 11/07/95

% Moisture: 1 decanted: (Y/N) N

Date Extracted: 11/14/95

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 11/20/95

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N)N pH: _____

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NO.

COMPOUND

Q

108-95-2-----	Phenol	330	U
111-44-4-----	bis(2-Chloroethyl)ether	330	U
95-57-8-----	2-Chlorophenol	330	U
541-73-1-----	1,3-Dichlorobenzene	330	U
106-46-7-----	1,4-Dichlorobenzene	330	U
100-51-6-----	Benzyl Alcohol	330	U
95-50-1-----	1,2-Dichlorobenzene	330	U
95-48-7-----	2-Methylphenol	330	U
108-60-1-----	2,2'-oxybis(1-Chloropropane)	330	U
106-44-5-----	4-Methylphenol	330	U
621-64-7-----	N-Nitroso-Di-n-propylamine	330	U
67-72-1-----	Hexachloroethane	330	U
98-95-3-----	Nitrobenzene	330	U
78-59-1-----	Isophorone	330	U
88-75-5-----	2-Nitrophenol	330	U
105-67-9-----	2,4-Dimethylphenol	330	U
65-85-0-----	Benzoic acid	1700	U
111-91-1-----	bis(2-Chloroethoxy)methane	330	U
120-83-2-----	2,4-Dichlorophenol	330	U
120-82-1-----	1,2,4-Trichlorobenzene	330	U
91-20-3-----	Naphthalene	330	U
106-47-8-----	4-Chloroaniline	330	U
87-68-3-----	Hexachlorobutadiene	330	U
59-50-7-----	4-Chloro-3-methylphenol	330	U
91-57-6-----	2-Methylnaphthalene	330	U
77-47-4-----	Hexachlorocyclopentadiene	330	U
88-06-2-----	2,4,6-Trichlorophenol	330	U
95-95-4-----	2,4,5-Trichlorophenol	1700	U
91-58-7-----	2-Chloronaphthalene	330	U
88-74-4-----	2-Nitroaniline	1700	U
131-11-3-----	Dimethylphthalate	330	U
208-96-8-----	Acenaphthylene	330	U
99-09-2-----	3-Nitroaniline	1700	U
83-32-9-----	Acenaphthene	330	U
51-28-5-----	2,4-Dinitrophenol	1700	U

EPA SAMPLE NO.

RDS9

Contract:

SDG No.:

Lab Sample ID: 9516048

Lab File ID: VE5A6442.D

Date Received: 11/7/95

Date Analyzed: 11/17/95

Dilution Factor: 1.0

Soil Aliquot Volume: (uL)

(ug/L or ug/Kg)

ug/Kg

Q

030166

FORM I
SAMPLE ANALYSIS RESULTS

Lab Name: EA Laboratories
Case No.: 9542025
Sample No.: RDS-8
Sample matrix: SOIL
Total Solids: 98.5%

Contract: FORTBLISS
SDG No.: 9516032
Lab Sample ID No.: 9516047
Date Received: 11/07/95

Lab ID	Parameter	Sample Conc.	Concentration Units	Analyzed Date
516047	OIL AND GREASE	145	mg/kg (dry)	11/28/95
	TOT PETROL HYDROCARB	142	mg/kg (dry)	11/28/95

060015

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

RDS-8 RE

Lab Name: EA LABS

Contract:

Lab Code: EAENG

Case No:

SAS No.: _____

SDG No:

Matrix: (soil/water) SOIL

Lab Sample ID: 9516047

Sample wt/vol: 30.0 (g/ml) G

Lab File ID: SA1A7184

Level: (low/med) LOW

Date Received: 11/07/95

% Moisture: 2 decanted: (Y/N) N

Date Extracted: 11/14/95

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 11/21/95

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

CONCENTRATION UNITS:
(ug/L or ug/Kg)ug/Kg

CAS NO.

COMPOUND

Q

100-02-7-----	4-Nitrophenol	1700	U
132-64-9-----	Dibenzofuran	340	U
121-14-2-----	2,4-Dinitrotoluene	340	U
606-20-2-----	2,6-Dinitrotoluene	340	U
84-66-2-----	Diethylphthalate	340	U
7005-72-3-----	4-Chlorophenyl-phenylether	340	U
86-73-7-----	Fluorene	340	U
100-01-6-----	4-Nitroaniline	1700	U
534-52-1-----	4,6-Dinitro-2-methylphenol	1700	U
86-30-6-----	N-Nitrosodiphenylamine	340	U
101-55-3-----	4-Bromophenyl-phenylether	340	U
118-74-1-----	Hexachlorobenzene	340	U
87-86-5-----	Pentachlorophenol	1700	U
85-01-8-----	Phenanthrene	340	U
120-12-7-----	Anthracene	340	U
84-74-2-----	Di-n-butyl phthalate	340	U
206-44-0-----	Fluoranthene	340	U
129-00-0-----	Pyrene	340	U
85-68-7-----	Butylbenzylphthalate	340	U
91-94-1-----	3,3'-Dichlorobenzidine	340	U
56-55-3-----	Benzo(a)anthracene	340	U
117-81-7-----	bis(2-Ethylhexyl)phthalate	340	U
218-01-9-----	Chrysene	340	U
117-84-0-----	Di-n-octyl phthalate	340	U
205-99-2-----	Benzo(b)fluoranthene	340	U
207-08-9-----	Benzo(k)fluoranthene	340	U
50-32-8-----	Benzo(a)pyrene	340	U
193-39-5-----	Indeno(1,2,3-cd)pyrene	340	U
53-70-3-----	Dibenz(a,h)anthracene	340	U
191-24-2-----	Benzo(g,h,i)perylene	340	U

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO:

RDS-8

Lab Name: EA LABS

Contract:

Code: EAENG

Case No:

SAS No.: _____

SDG No:

Matrix: (soil/water) SOIL

Lab Sample ID: 9516047

Sample wt/vol: 30.0 (g/ml) G

Lab File ID: SA1A7160

Level: (low/med) LOW

Date Received: 11/07/95

% Moisture: 2 decanted: (Y/N) N

Date Extracted: 11/14/95

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 11/20/95

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N)N pH: _____

Number TICS found: 6

CONCENTRATION UNITS
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 541-02-6----	Cyclopentasiloxane, <u>decamethyl-</u>	8.93	270	JN
2. 540-97-6----	Cyclohexasiloxane, <u>decamethyl-</u>	11.02	170	JN
3. -----	Unknown	18.55	2600	J
4. -----	Unknown	18.59	1100	J
5. -----	Unknown	19.48	2600	J
6. -----	Unknown	20.94	1900	J

Wen
12/15

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

RDS-8

Name: EA LABS

Contract:

Lab Code: EAENG

Case No:

SAS No.: _____

SDG No:

Matrix: (soil/water) SOIL

Lab Sample ID: 9516047

Sample wt/vol: 30.0 (g/ml) G

Lab File ID: SA1A7160

Level: (low/med) LOW

Date Received: 11/07/95

% Moisture: 2 decanted: (Y/N) N

Date Extracted: 11/14/95

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 11/20/95

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N)N pH: _____

CONCENTRATION UNITS:
(ug/L or ug/Kg)ug/Kg

Q

CAS NO.

COMPOUND

108-95-2-----	Phenol	340	U
111-44-4-----	bis(2-Chloroethyl)ether	340	U
95-57-8-----	2-Chlorophenol	340	U
541-73-1-----	1,3-Dichlorobenzene	340	U
106-46-7-----	1,4-Dichlorobenzene	340	U
100-51-6-----	Benzyl Alcohol	340	U
95-50-1-----	1,2-Dichlorobenzene	340	U
95-48-7-----	2-Methylphenol	340	U
108-60-1-----	2,2'-oxybis(1-Chloropropane)	340	U
106-44-5-----	4-Methylphenol	340	U
621-64-7-----	N-Nitroso-Di-n-propylamine	340	U
67-72-1-----	Hexachloroethane	340	U
98-95-3-----	Nitrobenzene	340	U
78-59-1-----	Isophorone	340	U
88-75-5-----	2-Nitrophenol	340	U
105-67-9-----	2,4-Dimethylphenol	340	U
65-85-0-----	Benzoic acid	1700	U
111-91-1-----	bis(2-Chloroethoxy)methane	340	U
120-83-2-----	2,4-Dichlorophenol	340	U
120-82-1-----	1,2,4-Trichlorobenzene	340	U
91-20-3-----	Naphthalene	340	U
106-47-8-----	4-Chloroaniline	340	U
87-68-3-----	Hexachlorobutadiene	340	U
59-50-7-----	4-Chloro-3-methylphenol	340	U
91-57-6-----	2-Methylnaphthalene	340	U
77-47-4-----	Hexachlorocyclopentadiene	340	U
88-06-2-----	2,4,6-Trichlorophenol	340	U
95-95-4-----	2,4,5-Trichlorophenol	1700	U
91-58-7-----	2-Chloronaphthalene	340	U
88-74-4-----	2-Nitroaniline	1700	U
131-11-3-----	Dimethylphthalate	340	U
208-96-8-----	Acenaphthylene	340	U
99-09-2-----	3-Nitroaniline	1700	U
83-32-9-----	Acenaphthene	340	U
51-28-5-----	2,4-Dinitrophenol	1700	U

EPA SAMPLE NO.

RDS8

Case No.:

SDG No.:

Soil Aliquot Volume: (uL)

(ug/L or ug/Kg)

ug/Kg

O

[illegible]

FORM I
SAMPLE ANALYSIS RESULTS

Lab Name: EA Laboratories
Case No.: 9542025
Sample No.: RDS-7
Sample matrix: SOIL
Total Solids: 98.3%

Contract: FORTBLISS
SDG No.: 9516032
Lab Sample ID No.: 9516046
Date Received: 11/07/95

Lab ID	Parameter	Sample Conc.	Concentration Units	Analyzed Date
516046	OIL AND GREASE	578	mg/kg (dry)	11/28/95
	TOT PETROL HYDROCARB	556	mg/kg (dry)	12/01/95

060014

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

RDS-7 RE

Lab Name: EA LABS

Contract:

Lab Code: EAENG

Case No:

SAS No.: _____

SDG No:

Matrix: (soil/water) SOIL

Lab Sample ID: 9516046

Sample wt/vol: 30.0 (g/ml) G

Lab File ID: SA1A7183

Level: (low/med) LOW

Date Received: 11/07/95

% Moisture: 2 decanted: (Y/N) N

Date Extracted: 11/14/95

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 11/21/95

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N)N pH: _____

CONCENTRATION UNITS:
(ug/L or ug/Kg)ug/Kg

CAS NO.

COMPOUND

Q

100-02-7-----	4-Nitrophenol	1700	U
132-64-9-----	Dibenzofuran	340	U
121-14-2-----	2,4-Dinitrotoluene	340	U
606-20-2-----	2,6-Dinitrotoluene	340	U
84-66-2-----	Diethylphthalate	340	U
7005-72-3-----	4-Chlorophenyl-phenylether	340	U
86-73-7-----	Fluorene	340	U
100-01-6-----	4-Nitroaniline	1700	U
534-52-1-----	4,6-Dinitro-2-methylphenol	1700	U
86-30-6-----	N-Nitrosodiphenylamine	340	U
101-55-3-----	4-Bromophenyl-phenylether	340	U
118-74-1-----	Hexachlorobenzene	340	U
87-86-5-----	Pentachlorophenol	1700	U
85-01-8-----	Phenanthrene	340	U
120-12-7-----	Anthracene	340	U
84-74-2-----	Di-n-butyl phthalate	340	U
206-44-0-----	Fluoranthene	340	U
129-00-0-----	Pyrene	340	U
85-68-7-----	Butylbenzylphthalate	340	U
91-94-1-----	3,3'-Dichlorobenzidine	340	U
56-55-3-----	Benzo(a)anthracene	340	U
117-81-7-----	bis(2-Ethylhexyl)phthalate	77	J
218-01-9-----	Chrysene	340	U
117-84-0-----	Di-n-octyl phthalate	340	U
205-99-2-----	Benzo(b)fluoranthene	340	U
207-08-9-----	Benzo(k)fluoranthene	340	U
50-32-8-----	Benzo(a)pyrene	340	U
193-39-5-----	Indeno(1,2,3-cd)pyrene	340	U
53-70-3-----	Dibenz(a,h)anthracene	340	U
191-24-2-----	Benzo(g,h,i)perylene	340	U

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO:

RDS-7

Lab Name: EA LABS

Contract:

Lab Code: EAENG

Case No:

SAS No.: _____

SDG No:

Matrix: (soil/water) SOIL

Lab Sample ID: 9516046

Sample wt/vol: 30.0 (g/ml) G

Lab File ID: SA1A7159

Level: (low/med) LOW

Date Received: 11/07/95

Moisture: 2 decanted: (Y/N) N

Date Extracted: 11/14/95

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 11/20/95

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

PC Cleanup: (Y/N) N

pH: _____

Number TICS found: 8

CONCENTRATION UNITS
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.541-02-6----	Cyclopentasiloxane <i>decamethyl-</i>	8.93	320	JN
2.540-97-6----	Cyclohexasiloxane <i>decamethyl-</i>	11.03	170	JN
3.-----	Unknown hydrocarbon	15.41	200	J
4.-----	Unknown hydrocarbon	16.36	190	J
5.-----	Unknown	18.54	2300	J
6.-----	Unknown	18.58	980	J
7.-----	Unknown	19.48	1600	J
8.-----	Unknown	20.94	1300	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

RDS-7

Lab Name: EA LABS

Contract:

Lab Code: EAENG

Case No:

SAS No.: _____

SDG No:

Matrix: (soil/water) SOIL

Lab Sample ID: 9516046

Sample wt/vol: 30.0 (g/ml) G

Lab File ID: SA1A7159

Level: (low/med) LOW

Date Received: 11/07/95

% Moisture: 2 decanted: (Y/N) N

Date Extracted: 11/14/95

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 11/20/95

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)ug/Kg	Q
---------	----------	--	---

108-95-2-----	Phenol	340	U
111-44-4-----	bis(2-Chloroethyl)ether	340	U
95-57-8-----	2-Chlorophenol	340	U
541-73-1-----	1,3-Dichlorobenzene	340	U
106-46-7-----	1,4-Dichlorobenzene	340	U
100-51-6-----	Benzyl Alcohol	340	U
95-50-1-----	1,2-Dichlorobenzene	340	U
95-48-7-----	2-Methylphenol	340	U
108-60-1-----	2,2'-oxybis(1-Chloropropane)	340	U
106-44-5-----	4-Methylphenol	340	U
621-64-7-----	N-Nitroso-Di-n-propylamine	340	U
67-72-1-----	Hexachloroethane	340	U
98-95-3-----	Nitrobenzene	340	U
78-59-1-----	Isophorone	340	U
88-75-5-----	2-Nitrophenol	340	U
105-67-9-----	2,4-Dimethylphenol	340	U
65-85-0-----	Benzoic acid	1700	U
111-91-1-----	bis(2-Chloroethoxy)methane	340	U
120-83-2-----	2,4-Dichlorophenol	340	U
120-82-1-----	1,2,4-Trichlorobenzene	340	U
91-20-3-----	Naphthalene	340	U
106-47-8-----	4-Chloroaniline	340	U
87-68-3-----	Hexachlorobutadiene	340	U
59-50-7-----	4-Chloro-3-methylphenol	340	U
91-57-6-----	2-Methylnaphthalene	340	U
77-47-4-----	Hexachlorocyclopentadiene	340	U
88-06-2-----	2,4,6-Trichlorophenol	340	U
95-95-4-----	2,4,5-Trichlorophenol	1700	U
91-58-7-----	2-Chloronaphthalene	340	U
88-74-4-----	2-Nitroaniline	1700	U
131-11-3-----	Dimethylphthalate	340	U
208-96-8-----	Acenaphthylene	340	U
99-09-2-----	3-Nitroaniline	1700	U
83-32-9-----	Acenaphthene	340	U
51-28-5-----	2,4-Dinitrophenol	1700	U

FORM I
SAMPLE ANALYSIS RESULTS

Lab Name: EA Laboratories
Case No.: 9542025
Sample No.: RDS-6
Sample matrix: SOIL
Total Solids: 98.0%

Contract: FORTBLISS
SDG No.: 9516032
Lab Sample ID No.: 9516045
Date Received: 11/07/95

Lab ID	Parameter	Sample Conc.	Concentration Units	Analyzed Date
9516045	OIL AND GREASE	<25.2	mg/kg (dry)	11/28/95
	TOT PETROL HYDROCARB	<25.0	mg/kg (dry)	12/01/95

060013

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

RDS-6 RE

Lab Name: EA LABS

Contract:

Code: EAENG

Case No:

SAS No.: _____

SDG No:

Matrix: (soil/water) SOIL

Lab Sample ID: 9516045

Sample wt/vol: 30.0 (g/ml) G

Lab File ID: SA1A7182

Level: (low/med) LOW

Date Received: 11/07/95

% Moisture: 2 decanted: (Y/N) N

Date Extracted: 11/14/95

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 11/21/95

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N)N pH: _____

CONCENTRATION UNITS:
(ug/L or ug/Kg)ug/Kg

Q

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)ug/Kg	Q
100-02-7	4-Nitrophenol	1700	U
132-64-9	Dibenzofuran	340	U
121-14-2	2,4-Dinitrotoluene	340	U
606-20-2	2,6-Dinitrotoluene	340	U
84-66-2	Diethylphthalate	340	U
7005-72-3	4-Chlorophenyl-phenylether	340	U
86-73-7	Fluorene	340	U
100-01-6	4-Nitroaniline	1700	U
534-52-1	4,6-Dinitro-2-methylphenol	1700	U
86-30-6	N-Nitrosodiphenylamine	340	U
101-55-3	4-Bromophenyl-phenylether	340	U
118-74-1	Hexachlorobenzene	340	U
87-86-5	Pentachlorophenol	1700	U
85-01-8	Phenanthrene	110	J
120-12-7	Anthracene	340	U
84-74-2	Di-n-butyl phthalate	340	U
206-44-0	Fluoranthene	340	U
129-00-0	Pyrene	430	
85-68-7	Butylbenzylphthalate	340	U
91-94-1	3,3'-Dichlorobenzidine	340	U
56-55-3	Benzo(a)anthracene	340	U
117-81-7	bis(2-Ethylhexyl)phthalate	2100	
218-01-9	Chrysene	340	U
117-84-0	Di-n-octyl phthalate	340	U
205-99-2	Benzo(b)fluoranthene	340	U
207-08-9	Benzo(k)fluoranthene	340	U
50-32-8	Benzo(a)pyrene	340	U
193-39-5	Indeno(1,2,3-cd)pyrene	340	U
53-70-3	Dibenz(a,h)anthracene	340	U
191-24-2	Benzo(g,h,i)perylene	340	U

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO:

RDS-6

Lab Name: EA LABS

Contract:

Code: EAENG

Case No:

SAS No.: _____

SDG No:

Matrix: (soil/water) SOIL

Lab Sample ID: 9516045

Sample wt/vol: 30.0 (g/ml) G

Lab File ID: SA1A7158

Level: (low/med) LOW

Date Received: 11/07/95

% Moisture: 2 decanted: (Y/N) N

Date Extracted: 11/14/95

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 11/20/95

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N)N pH: _____

Number TICS found: 20

CONCENTRATION UNITS
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.541-02-6----	Cyclopentasiloxane, <i>decamethyl</i>	8.93	470	JN
2.-----	Isomers of C7H5NS	10.45	210	J
3.-----	Unknown <i>organic acid</i>	10.68	290	J
4.540-97-6----	Cyclohexasiloxane, <i>decamethyl</i>	11.02	290	JN
5.92-52-4----	Biphenyl	12.27	260	JN
6.-----	Isomers of trimethylnaphthalene	13.94	170	J
7.-----	Unknown	14.43	350	J
8.-----	Unknown	14.55	170	J
9.-----	Unknown	14.75	220	J
10.-----	Unknown	15.27	1100	J
11.-----	Unknown hydrocarbon	15.38	170	J
12.-----	Unknown	15.45	180	J
13.-----	Unknown	15.64	300	J
14.-----	Unknown	16.08	550	J
15.-----	Unknown	16.22	220	J
16.-----	Unknown	17.46	580	J
17.-----	Unknown	18.20	1500	J
18.-----	Unknown	18.56	2000	J
19.-----	Unknown	19.49	3800	J
20.-----	Unknown	20.94	2400	J

Column
11/30/95

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

RDS-6

Lab Name: EA LABS

Contract:

Lab Code: EAENG

Case No:

SAS No.: _____

SDG No:

Matrix: (soil/water) SOIL

Lab Sample ID: 9516045

Sample wt/vol: 30.0 (g/ml) G

Lab File ID: SA1A7158

Level: (low/med) LOW

Date Received: 11/07/95

% Moisture: 2 decanted: (Y/N) N

Date Extracted: 11/14/95

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 11/20/95

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N)N pH: _____

CONCENTRATION UNITS:
(ug/L or ug/Kg)ug/Kg

CAS NO.

COMPOUND

Q

108-95-2-----	Phenol	340	U
111-44-4-----	bis(2-Chloroethyl)ether	340	U
95-57-8-----	2-Chlorophenol	340	U
541-73-1-----	1,3-Dichlorobenzene	340	U
106-46-7-----	1,4-Dichlorobenzene	340	U
100-51-6-----	Benzyl Alcohol	340	U
95-50-1-----	1,2-Dichlorobenzene	340	U
95-48-7-----	2-Methylphenol	340	U
108-60-1-----	2,2'-oxybis(1-Chloropropane)	340	U
106-44-5-----	4-Methylphenol	340	U
621-64-7-----	N-Nitroso-Di-n-propylamine	340	U
67-72-1-----	Hexachloroethane	340	U
98-95-3-----	Nitrobenzene	340	U
78-59-1-----	Isophorone	340	U
88-75-5-----	2-Nitrophenol	340	U
105-67-9-----	2,4-Dimethylphenol	340	U
65-85-0-----	Benzoic acid	870	J
111-91-1-----	bis(2-Chloroethoxy)methane	340	U
120-83-2-----	2,4-Dichlorophenol	340	U
120-82-1-----	1,2,4-Trichlorobenzene	340	U
91-20-3-----	Naphthalene	95	J
106-47-8-----	4-Chloroaniline	340	U
87-68-3-----	Hexachlorobutadiene	340	U
59-50-7-----	4-Chloro-3-methylphenol	340	U
91-57-6-----	2-Methylnaphthalene	85	J
77-47-4-----	Hexachlorocyclopentadiene	340	U
88-06-2-----	2,4,6-Trichlorophenol	340	U
95-95-4-----	2,4,5-Trichlorophenol	1700	U
91-58-7-----	2-Chloronaphthalene	340	U
88-74-4-----	2-Nitroaniline	1700	U
131-11-3-----	Dimethylphthalate	340	U
208-96-8-----	Acenaphthylene	340	U
99-09-2-----	3-Nitroaniline	1700	U
83-32-9-----	Acenaphthene	340	U
51-28-5-----	2,4-Dinitrophenol	1700	U

EPA SAMPLE NO.

RDS6

Lab Name: EA LABORATORIES

Contract:

Lab Code: EA ENG

Case No.:

Method: 8260

SDG No.:

Matrix: (soil/water) SOIL

Lab Sample ID: 9516045

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: VESA6431.D

Level: (low/med) LOW

Date Received: 11/7/95

% Moisture: not dec. 2

Date Analyzed: 11/16/95

GC Column: RTX 502.2

ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

Concentration Units:

(ug/L or ug/Kg)

ug/Kg

Q

[illegible]

020138

FORM I
SAMPLE ANALYSIS RESULTS

Lab Name: EA Laboratories
Case No.: 9542025
Sample No.: RDS-5
Sample matrix: SOIL
Total Solids: 99.3%

Contract: FORTBLISS
SDG No.: 9516032
Lab Sample ID No.: 9516044
Date Received: 11/07/95

Lab ID	Parameter	Sample Conc.	Concentration Units	Analyzed Date
9516044	OIL AND GREASE	61.7	mg/kg (dry)	11/28/95
	TOT PETROL HYDROCARB	46.6	mg/kg (dry)	12/01/95

060012

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

RDS-5 RE

Lab Name: EA LABS

Contract:

Lab Code: EAENG

Case No:

SAS No.: _____

SDG No:

Matrix: (soil/water) SOIL

Lab Sample ID: 9516044

Sample wt/vol: 30.0 (g/ml) G

Lab File ID: SA1A7181

Level: (low/med) LOW

Date Received: 11/07/95

% Moisture: 1 decanted: (Y/N) N

Date Extracted: 11/14/95

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 11/21/95

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N)N pH: _____

CONCENTRATION UNITS:
(ug/L or ug/Kg)ug/Kg

Q

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)ug/Kg	Q
100-02-7-----	4-Nitrophenol	1700	U
132-64-9-----	Dibenzofuran	330	U
121-14-2-----	2,4-Dinitrotoluene	330	U
606-20-2-----	2,6-Dinitrotoluene	330	U
84-66-2-----	Diethylphthalate	330	U
7005-72-3-----	4-Chlorophenyl-phenylether	330	U
86-73-7-----	Fluorene	330	U
100-01-6-----	4-Nitroaniline	1700	U
534-52-1-----	4,6-Dinitro-2-methylphenol	1700	U
86-30-6-----	N-Nitrosodiphenylamine	330	U
101-55-3-----	4-Bromophenyl-phenylether	330	U
118-74-1-----	Hexachlorobenzene	330	U
87-86-5-----	Pentachlorophenol	1700	U
85-01-8-----	Phenanthrene	330	U
120-12-7-----	Anthracene	330	U
84-74-2-----	Di-n-butyl phthalate	330	U
206-44-0-----	Fluoranthene	330	U
129-00-0-----	Pyrene	330	U
85-68-7-----	Butylbenzylphthalate	330	U
91-94-1-----	3,3'-Dichlorobenzidine	330	U
56-55-3-----	Benzo(a)anthracene	330	U
117-81-7-----	bis(2-Ethylhexyl)phthalate	610	U
218-01-9-----	Chrysene	330	U
117-84-0-----	Di-n-octyl phthalate	330	U
205-99-2-----	Benzo(b)fluoranthene	330	U
207-08-9-----	Benzo(k)fluoranthene	330	U
50-32-8-----	Benzo(a)pyrene	330	U
193-39-5-----	Indeno(1,2,3-cd)pyrene	330	U
53-70-3-----	Dibenz(a,h)anthracene	330	U
191-24-2-----	Benzo(g,h,i)perylene	330	U

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO:

RDS-5

Lab Name: EA LABS

Contract:

Code: EAENG

Case No:

SAS No.: _____

SDG No:

Matrix: (soil/water) SOIL

Lab Sample ID: 9516044

Sample wt/vol: 30.0 (g/ml) G

Lab File ID: SA1A7157

Level: (low/med) LOW

Date Received: 11/07/95

% Moisture: 1 decanted: (Y/N) N

Date Extracted: 11/14/95

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 11/20/95

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N)N pH: _____

Number TICS found: 19

CONCENTRATION UNITS
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.541-02-6----	Cyclopentasiloxane, <i>decamethyl-</i>	8.93	280	JN
2.-----	Unknown	18.55	2200	J
3.-----	Unknown	18.58	1000	J
4.-----	Unknown	18.72	160	J
5.-----	Unknown	18.92	140	J
6.-----	Unknown	19.22	170	J
7.-----	Unknown	19.48	2500	J
8.-----	Unknown	20.09	230	J
9.-----	Unknown hydrocarbon	20.32	140	J
10.-----	Unknown	20.63	370	J
11.-----	Unknown	20.93	2200	J
12.-----	Unknown hydrocarbon	21.71	230	J
13.-----	Unknown hydrocarbon	22.36	140	J
14.-----	Unknown hydrocarbon	22.99	640	J
15.-----	Unknown hydrocarbon	23.60	360	J
16.-----	Unknown hydrocarbon	24.24	3500	J
17.-----	Unknown hydrocarbon	24.95	270	J
18.-----	Unknown hydrocarbon	25.80	4800	J
19.-----	Unknown hydrocarbon	27.94	1600	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

RDS-5

Lab Name: EA LABS

Contract:

Lab Code: EAENG

Case No:

SAS No.: _____

SDG No:

Matrix: (soil/water) SOIL

Lab Sample ID: 9516044

Sample wt/vol: 30.0 (g/ml) G

Lab File ID: SA1A7157

Level: (low/med) LOW

Date Received: 11/07/95

% Moisture: 1 decanted: (Y/N) N

Date Extracted: 11/14/95

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 11/20/95

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N)N pH: _____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)ug/Kg	Q
---------	----------	--	---

108-95-2-----	Phenol	330	U
111-44-4-----	bis(2-Chloroethyl) ether	330	U
95-57-8-----	2-Chlorophenol	330	U
541-73-1-----	1,3-Dichlorobenzene	330	U
106-46-7-----	1,4-Dichlorobenzene	330	U
100-51-6-----	Benzyl Alcohol	330	U
95-50-1-----	1,2-Dichlorobenzene	330	U
95-48-7-----	2-Methylphenol	330	U
108-60-1-----	2,2'-oxybis(1-Chloropropane)	330	U
106-44-5-----	4-Methylphenol	330	U
621-64-7-----	N-Nitroso-Di-n-propylamine	330	U
67-72-1-----	Hexachloroethane	330	U
98-95-3-----	Nitrobenzene	330	U
78-59-1-----	Isophorone	330	U
88-75-5-----	2-Nitrophenol	330	U
105-67-9-----	2,4-Dimethylphenol	330	U
65-85-0-----	Benzoic acid	1700	U
111-91-1-----	bis(2-Chloroethoxy) methane	330	U
120-83-2-----	2,4-Dichlorophenol	330	U
120-82-1-----	1,2,4-Trichlorobenzene	330	U
91-20-3-----	Naphthalene	330	U
106-47-8-----	4-Chloroaniline	330	U
87-68-3-----	Hexachlorobutadiene	330	U
59-50-7-----	4-Chloro-3-methylphenol	330	U
91-57-6-----	2-Methylnaphthalene	330	U
77-47-4-----	Hexachlorocyclopentadiene	330	U
88-06-2-----	2,4,6-Trichlorophenol	330	U
95-95-4-----	2,4,5-Trichlorophenol	1700	U
91-58-7-----	2-Chloronaphthalene	330	U
88-74-4-----	2-Nitroaniline	1700	U
131-11-3-----	Dimethylphthalate	330	U
208-96-8-----	Acenaphthylene	330	U
99-09-2-----	3-Nitroaniline	1700	U
83-32-9-----	Acenaphthene	330	U
51-28-5-----	2,4-Dinitrophenol	1700	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RDS5

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ Method: 8260 SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 9516044

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VE5A6430.D

Level: (low/med) LOW Date Received: 11/7/95

% Moisture: not dec. 1 Date Analyzed: 11/16/95

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Concentration Units:

CAS No.	Compound	(ug/L or ug/Kg)	ug/Kg	Q
95-47-6	o-Xylene	5		U
100-42-5	Styrene	5		U
75-25-2	Bromoform	5		U
98-82-8	Isopropylbenzene	5		U
79-34-5	1,1,2,2-Tetrachloroethane	5		U
96-18-4	1,2,3-Trichloropropane	5		U
103-65-1	n-Propylbenzene	5		U
108-86-1	Bromobenzene	5		U
108-67-8	1,3,5-Trimethylbenzene	5		U
95-49-8	2-Chlorotoluene	5		U
106-43-4	4-Chlorotoluene	5		U
98-06-6	tert-Butylbenzene	5		U
95-63-6	1,2,4-Trimethylbenzene	5		U
135-98-8	sec-Butylbenzene	5		U
99-87-6	p-Isopropyltoluene	5		U
541-73-1	1,3-Dichlorobenzene	5		U
106-46-7	1,4-Dichlorobenzene	5		U
104-51-8	n-Butylbenzene	5		U
95-50-1	1,2-Dichlorobenzene	5		U
96-12-8	1,2-Dibromo-3-chloropropane	5		U
120-82-1	1,2,4-Trichlorobenzene	5		U
87-68-3	Hexachlorobutadiene	5		U
91-20-3	Naphthalene	5		U
87-61-6	1,2,3-Trichlorobenzene	5		U

030129

FORM I
SAMPLE ANALYSIS RESULTS

Lab Name: EA Laboratories
Case No.: 9542025
Sample No.: RDS-4
Sample matrix: SOIL
Total Solids: 96.9%

Contract: FORTBLISS
SDG No.: 9516032
Lab Sample ID No.: 9516043
Date Received: 11/07/95

Lab ID	Parameter	Sample Conc.	Concentration Units	Analyzed Date
9516043	OIL AND GREASE	27.8	mg/kg (dry)	11/28/95
	TOT PETROL HYDROCARB	31.6	mg/kg (dry)	12/01/95

060011

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

RDS-4

Lab Name: EA LABS

Contract:

Lab Code: EAENG

Case No:

SAS No.: _____

SDG No:

Matrix: (soil/water) SOIL

Lab Sample ID: 9516043

Sample wt/vol: 30.0 (g/ml) G

Lab File ID: SA1A7156

Level: (low/med) LOW

Date Received: 11/07/95

% Moisture: 3 decanted: (Y/N) N

Date Extracted: 11/14/95

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 11/20/95

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N)N pH: _____

CONCENTRATION UNITS:

CAS NO.

COMPOUND

(ug/L or ug/Kg)ug/Kg

Q

100-02-7-----	4-Nitrophenol	1800	U
132-64-9-----	Dibenzofuran	340	U
121-14-2-----	2,4-Dinitrotoluene	340	U
606-20-2-----	2,6-Dinitrotoluene	340	U
84-66-2-----	Diethylphthalate	340	U
7005-72-3-----	4-Chlorophenyl-phenylether	340	U
86-73-7-----	Fluorene	340	U
100-01-6-----	4-Nitroaniline	1800	U
534-52-1-----	4,6-Dinitro-2-methylphenol	1800	U
86-30-6-----	N-Nitrosodiphenylamine	340	U
101-55-3-----	4-Bromophenyl-phenylether	340	U
118-74-1-----	Hexachlorobenzene	340	U
87-86-5-----	Pentachlorophenol	1800	U
85-01-8-----	Phenanthrene	340	U
120-12-7-----	Anthracene	340	U
84-74-2-----	Di-n-butyl phthalate	340	U
206-44-0-----	Fluoranthene	340	U
129-00-0-----	Pyrene	340	U
85-68-7-----	Butylbenzylphthalate	340	U
91-94-1-----	3,3'-Dichlorobenzidine	340	U
56-55-3-----	Benzo(a)anthracene	340	U
117-81-7-----	bis(2-Ethylhexyl)phthalate	340	U
218-01-9-----	Chrysene	340	U
117-84-0-----	Di-n-octyl phthalate	340	U
205-99-2-----	Benzo(b)fluoranthene	340	U
207-08-9-----	Benzo(k)fluoranthene	340	U
50-32-8-----	Benzo(a)pyrene	340	U
193-39-5-----	Indeno(1,2,3-cd)pyrene	340	U
53-70-3-----	Dibenz(a,h)anthracene	340	U
191-24-2-----	Benzo(g,h,i)perylene	340	U

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

RDS4

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ Method: 8260 SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 9516043

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VE5A6429.D

Level: (low/med) LOW Date Received: 11/7/95

% Moisture: not dec. 3 Date Analyzed: 11/16/95

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Concentration Units:

Number TICs found: 2 (ug/L or ug/Kg) ug/Kg

CAS Number	Compound Name	RT	Est. Conc.	Q
1. 556-67-2	Cyclotetrasiloxane, octameth	22.50	18	J
2.	Unknown	26.07	100	J
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
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28.				
29.				
30.				

030119

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RDS4

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ Method: 8260 SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 9516043

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VE5A6429.D

Level: (low/med) LOW Date Received: 11/7/95

% Moisture: not dec. 3 Date Analyzed: 11/16/95

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Concentration Units:
(ug/L or ug/Kg) ug/Kg

CAS No.	Compound	Q
75-71-8	Dichlorodifluoromethane	U
74-87-3	Chloromethane	U
75-01-4	Vinyl Chloride	U
74-83-9	Bromomethane	U
75-00-3	Chloroethane	U
75-69-4	Trichlorofluoromethane	U
75-35-4	1,1-Dichloroethene	U
75-09-2	Methylene Chloride	U
156-60-5	trans-1,2-Dichloroethene	U
75-34-3	1,1-Dichloroethane	U
594-20-7	2,2-Dichloropropane	U
156-59-2	cis-1,2-Dichloroethene	U
67-66-3	Chloroform	U
74-97-5	Bromochloromethane	U
71-55-6	1,1,1-Trichloroethane	U
563-58-6	1,1-Dichloropropene	U
56-23-5	Carbon Tetrachloride	U
107-06-2	1,2-Dichloroethane	U
71-43-2	Benzene	U
79-01-6	Trichloroethene	U
78-87-5	1,2-Dichloropropane	U
75-27-4	Bromodichloromethane	U
74-95-3	Dibromomethane	U
108-88-3	Toluene	U
79-00-5	1,1,2-Trichloroethane	U
106-93-4	1,2-Dibromoethane(EDB)	U
142-28-9	1,3-Dichloropropane	U
127-18-4	Tetrachloroethene	U
124-48-1	Chlorodibromomethane	U
108-90-7	Chlorobenzene	U
630-20-6	1,1,1,2-Tetrachloroethane	U
100-41-4	Ethylbenzene	U
106-42-3	m&p Xylenes	U

030117

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO:

RDS-3

Lab Name: EA LABS

Contract:

Lab Code: EAENG

Case No:

SAS No.: _____

SDG No:

Matrix: (soil/water) SOIL

Lab Sample ID: 9516042

Sample wt/vol: 30.0 (g/ml) G

Lab File ID: SA1A7155

Level: (low/med) LOW

Date Received: 11/07/95

% Moisture: 2 decanted: (Y/N) N

Date Extracted: 11/14/95

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 11/20/95

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N)N pH: _____

Number TICS found: 9

CONCENTRATION UNITS
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.-----	Unknown	5.18	190	J
2.541-02-6----	Cyclopentasiloxane <u>decamethyl-</u>	8.93	1800	JN
3.540-97-6----	Cyclohexasiloxane <u>decamethyl-</u>	11.02	1300	JN
4.-----	Unknown	12.90	270	J
5.-----	Unknown	18.54	1300	J
6.-----	Unknown	18.58	530	J
7.-----	Unknown	19.48	2200	J
8.-----	Unknown	20.94	1900	J
9.-----	Unknown hydrocarbon	22.99	150	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

RDS-3

Lab Name: EA LABS

Contract:

Lab Code: EAENG

Case No:

SAS No.: _____

SDG No:

Matrix: (soil/water) SOIL

Lab Sample ID: 9516042

Sample wt/vol: 30.0 (g/ml) G

Lab File ID: SA1A7155

Level: (low/med) LOW

Date Received: 11/07/95

% Moisture: 2 decanted: (Y/N) N

Date Extracted: 11/14/95

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 11/20/95

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N)N pH: _____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)ug/Kg	Q
---------	----------	--	---

108-95-2-----	Phenol	340	U
111-44-4-----	bis(2-Chloroethyl) ether	340	U
95-57-8-----	2-Chlorophenol	340	U
541-73-1-----	1,3-Dichlorobenzene	340	U
106-46-7-----	1,4-Dichlorobenzene	340	U
100-51-6-----	Benzyl Alcohol	340	U
95-50-1-----	1,2-Dichlorobenzene	340	U
95-48-7-----	2-Methylphenol	340	U
108-60-1-----	2,2'-oxybis(1-Chloropropane)	340	U
106-44-5-----	4-Methylphenol	340	U
621-64-7-----	N-Nitroso-Di-n-propylamine	340	U
67-72-1-----	Hexachloroethane	340	U
98-95-3-----	Nitrobenzene	340	U
78-59-1-----	Isophorone	340	U
88-75-5-----	2-Nitrophenol	340	U
105-67-9-----	2,4-Dimethylphenol	340	U
65-85-0-----	Benzoic acid	1700	U
111-91-1-----	bis(2-Chloroethoxy)methane	340	U
120-83-2-----	2,4-Dichlorophenol	340	U
120-82-1-----	1,2,4-Trichlorobenzene	340	U
91-20-3-----	Naphthalene	340	U
106-47-8-----	4-Chloroaniline	340	U
87-68-3-----	Hexachlorobutadiene	340	U
59-50-7-----	4-Chloro-3-methylphenol	340	U
91-57-6-----	2-Methylnaphthalene	340	U
77-47-4-----	Hexachlorocyclopentadiene	340	U
88-06-2-----	2,4,6-Trichlorophenol	340	U
95-95-4-----	2,4,5-Trichlorophenol	1700	U
91-58-7-----	2-Chloronaphthalene	340	U
88-74-4-----	2-Nitroaniline	1700	U
131-11-3-----	Dimethylphthalate	340	U
208-96-8-----	Acenaphthylene	340	U
99-09-2-----	3-Nitroaniline	1700	U
83-32-9-----	Acenaphthene	340	U
51-28-5-----	2,4-Dinitrophenol	1700	U

RDS3

Contract:

SDG No.:

Lab Sample ID: 9516042

Lab File ID: VE5A6426.D

Date Received: 11/7/95

Date Analyzed: 11/16/95

Dilution Factor: 1.0

Soil Aliquot Volume: (uL)

(ug/L or ug/Kg)

ug/Kg

Q

030108

FORM I
SAMPLE ANALYSIS RESULTS

Lab Name: EA Laboratories
Case No.: 9542025
Sample No.: RDS-2
Sample matrix: SOIL
Total Solids: 95.1%

Contract: FORTBLISS
SDG No.: 9516032
Lab Sample ID No.: 9516041
Date Received: 11/07/95

Lab ID	Parameter	Sample Conc.	Concentration Units	Analyzed Date
9516041	OIL AND GREASE	40.2	mg/kg (dry)	11/28/95
	TOT PETROL HYDROCARB	29.1	mg/kg (dry)	12/01/95

060009

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

RDS-2

Lab Name: EA LABS

Contract:

Lab Code: EAENG

Case No:

SAS No.: _____

SDG No:

Matrix: (soil/water) SOIL

Lab Sample ID: 9516041

Sample wt/vol: 30.0 (g/ml) G

Lab File ID: SA1A7154

Level: (low/med) LOW

Date Received: 11/07/95

% Moisture: 5 decanted: (Y/N) N

Date Extracted: 11/14/95

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 11/20/95

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N)N pH: _____

CONCENTRATION UNITS:
(ug/L or ug/Kg)ug/Kg

Q

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)ug/Kg	Q
100-02-7-----	4-Nitrophenol	1800	U
132-64-9-----	Dibenzofuran	350	U
121-14-2-----	2,4-Dinitrotoluene	350	U
606-20-2-----	2,6-Dinitrotoluene	350	U
84-66-2-----	Diethylphthalate	350	U
7005-72-3-----	4-Chlorophenyl-phenylether	350	U
86-73-7-----	Fluorene	350	U
100-01-6-----	4-Nitroaniline	1800	U
534-52-1-----	4,6-Dinitro-2-methylphenol	1800	U
86-30-6-----	N-Nitrosodiphenylamine	350	U
101-55-3-----	4-Bromophenyl-phenylether	350	U
118-74-1-----	Hexachlorobenzene	350	U
87-86-5-----	Pentachlorophenol	1800	U
85-01-8-----	Phenanthrene	350	U
120-12-7-----	Anthracene	350	U
84-74-2-----	Di-n-butyl phthalate	350	U
206-44-0-----	Fluoranthene	350	U
129-00-0-----	Pyrene	350	U
85-68-7-----	Butylbenzylphthalate	350	U
91-94-1-----	3,3'-Dichlorobenzidine	350	U
56-55-3-----	Benzo(a)anthracene	350	U
117-81-7-----	bis(2-Ethylhexyl)phthalate	350	U
218-01-9-----	Chrysene	350	U
117-84-0-----	Di-n-octyl phthalate	350	U
205-99-2-----	Benzo(b)fluoranthene	350	U
207-08-9-----	Benzo(k)fluoranthene	350	U
50-32-8-----	Benzo(a)pyrene	350	U
193-39-5-----	Indeno(1,2,3-cd)pyrene	350	U
53-70-3-----	Dibenz(a,h)anthracene	350	U
191-24-2-----	Benzo(g,h,i)perylene	350	U

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

RDS2

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ Method: 8260 SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 9516041

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VE5A6398.D

Level: (low/med) LOW Date Received: 11/7/95

% Moisture: not dec. 5 Date Analyzed: 11/13/95

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Concentration Units:

Number TICs found: 0

(ug/L or ug/Kg) ug/Kg

CAS Number	Compound Name	RT	Est. Conc.	Q
1.				
2.				
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030100

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RDS2

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ Method: 8260 SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 9516041

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VE5A6398.D

Level: (low/med) LOW Date Received: 11/7/95

% Moisture: not dec. 5 Date Analyzed: 11/13/95

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Concentration Units:

CAS No.	Compound	(ug/L or ug/Kg)	ug/Kg	Q
75-71-8	Dichlorodifluoromethane	5		U
74-87-3	Chloromethane	5		U
75-01-4	Vinyl Chloride	5		U
74-83-9	Bromomethane	5		U
75-00-3	Chloroethane	5		U
75-69-4	Trichlorofluoromethane	5		U
75-35-4	1,1-Dichloroethene	5		U
75-09-2	Methylene Chloride	5		U
156-60-5	trans-1,2-Dichloroethene	5		U
75-34-3	1,1-Dichloroethane	5		U
594-20-7	2,2-Dichloropropane	5		U
156-59-2	cis-1,2-Dichloroethene	5		U
67-66-3	Chloroform	5		U
74-97-5	Bromochloromethane	5		U
71-55-6	1,1,1-Trichloroethane	5		U
563-58-6	1,1-Dichloropropene	5		U
56-23-5	Carbon Tetrachloride	5		U
107-06-2	1,2-Dichloroethane	5		U
71-43-2	Benzene	5		U
79-01-6	Trichloroethene	5		U
78-87-5	1,2-Dichloropropane	5		U
75-27-4	Bromodichloromethane	5		U
74-95-3	Dibromomethane	5		U
108-88-3	Toluene	5		U
79-00-5	1,1,2-Trichloroethane	5		U
106-93-4	1,2-Dibromoethane(EDB)	5		U
142-28-9	1,3-Dichloropropane	5		U
127-18-4	Tetrachloroethene	5		U
124-48-1	Chlorodibromomethane	5		U
108-90-7	Chlorobenzene	5		U
630-20-6	1,1,1,2-Tetrachloroethane	5		U
100-41-4	Ethylbenzene	5		U
106-42-3	m&p Xylenes	5		U

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO:

RDS-1 RE

Lab Name: EA LABS

Contract:

Code: EAENG

Case No:

SAS No.: _____

SDG No:

Matrix: (soil/water) SOIL

Lab Sample ID: 9516040

Sample wt/vol: 30.0 (g/ml) G

Lab File ID: SA1A7180

Level: (low/med) LOW

Date Received: 11/07/95

Moisture: 2 decanted: (Y/N) N

Date Extracted: 11/14/95

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 11/21/95

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

PC Cleanup: (Y/N) N

pH: _____

Number TICS found: 11

CONCENTRATION UNITS
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.-----	Unknown	4.30	240	J
2.-----	Unknown	5.16	180	J
3.-----	Unknown	7.26	140	J
4.541-02-6----	Cyclopentasiloxane, decemethyl	8.91	1000	JN
5.-----	Unknown organic acid	10.64	220	J
6.-----	Unknown	11.00	570	J
7.-----	Unknown	16.11	160	J
8.-----	Unknown acid methyl ester	17.36	200	J
9.-----	Unknown	18.51	2100	J
10.-----	Unknown	19.45	2000	J
11.-----	Unknown	20.91	1500	J

OK
11/30

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

RDS-1 RE

Name: EA LABS Contract: _____
 Lab Code: EAENG Case No: _____ SAS No.: _____ SDG No: _____
 Matrix: (soil/water) SOIL Lab Sample ID: 9516040
 Sample wt/vol: 30.0 (g/ml) G Lab File ID: SA1A7180
 Level: (low/med) LOW Date Received: 11/07/95
 Moisture: 2 decanted: (Y/N) N Date Extracted: 11/14/95
 Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/21/95
 Injection Volume: 1.0 (uL) Dilution Factor: 1.0
 PC Cleanup: (Y/N) N pH: _____

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	340	U
111-44-4	bis(2-Chloroethyl) ether	340	U
95-57-8	2-Chlorophenol	340	U
541-73-1	1,3-Dichlorobenzene	340	U
106-46-7	1,4-Dichlorobenzene	340	U
100-51-6	Benzyl Alcohol	340	U
95-50-1	1,2-Dichlorobenzene	340	U
95-48-7	2-Methylphenol	340	U
108-60-1	2,2'-oxybis(1-Chloropropane)	340	U
106-44-5	4-Methylphenol	340	U
621-64-7	N-Nitroso-Di-n-propylamine	340	U
67-72-1	Hexachloroethane	340	U
98-95-3	Nitrobenzene	340	U
78-59-1	Isophorone	340	U
88-75-5	2-Nitrophenol	340	U
105-67-9	2,4-Dimethylphenol	340	U
65-85-0	Benzoic acid	1700	U
111-91-1	bis(2-Chloroethoxy) methane	340	U
120-83-2	2,4-Dichlorophenol	340	U
120-82-1	1,2,4-Trichlorobenzene	340	U
91-20-3	Naphthalene	340	U
106-47-8	4-Chloroaniline	340	U
87-68-3	Hexachlorobutadiene	340	U
59-50-7	4-Chloro-3-methylphenol	340	U
91-57-6	2-Methylnaphthalene	340	U
77-47-4	Hexachlorocyclopentadiene	340	U
88-06-2	2,4,6-Trichlorophenol	340	U
95-95-4	2,4,5-Trichlorophenol	1700	U
91-58-7	2-Chloronaphthalene	340	U
88-74-4	2-Nitroaniline	1700	U
131-11-3	Dimethylphthalate	340	U
208-96-8	Acenaphthylene	340	U
99-09-2	3-Nitroaniline	1700	U
83-32-9	Acenaphthene	340	U
51-28-5	2,4-Dinitrophenol	1700	U

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

RDS-1

Lab Name: EA LABS

Contract:

Code: EAENG

Case No:

SAS No.: _____

SDG No:

Matrix: (soil/water) SOIL

Lab Sample ID: 9516040

Sample wt/vol: 30.0 (g/ml) G

Lab File ID: SA1A7153

Level: (low/med) LOW

Date Received: 11/07/95

% Moisture: 2 decanted: (Y/N) N

Date Extracted: 11/14/95

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 11/20/95

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N

pH: _____

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NO.

COMPOUND

Q

100-02-7-----	4-Nitrophenol	1700	U
132-64-9-----	Dibenzofuran	340	U
121-14-2-----	2,4-Dinitrotoluene	340	U
606-20-2-----	2,6-Dinitrotoluene	340	U
84-66-2-----	Diethylphthalate	340	U
7005-72-3-----	4-Chlorophenyl-phenylether	340	U
86-73-7-----	Fluorene	340	U
100-01-6-----	4-Nitroaniline	1700	U
534-52-1-----	4,6-Dinitro-2-methylphenol	1700	U
86-30-6-----	N-Nitrosodiphenylamine	340	U
101-55-3-----	4-Bromophenyl-phenylether	340	U
118-74-1-----	Hexachlorobenzene	340	U
87-86-5-----	Pentachlorophenol	1700	U
85-01-8-----	Phenanthrene	340	U
120-12-7-----	Anthracene	340	U
84-74-2-----	Di-n-butyl phthalate	340	U
206-44-0-----	Fluoranthene	340	U
129-00-0-----	Pyrene	340	U
85-68-7-----	Butylbenzylphthalate	340	U
91-94-1-----	3,3'-Dichlorobenzidine	340	U
56-55-3-----	Benzo(a)anthracene	340	U
117-81-7-----	bis(2-Ethylhexyl)phthalate	340	U
218-01-9-----	Chrysene	340	U
117-84-0-----	Di-n-octyl phthalate	340	U
205-99-2-----	Benzo(b)fluoranthene	340	U
207-08-9-----	Benzo(k)fluoranthene	340	U
50-32-8-----	Benzo(a)pyrene	340	U
193-39-5-----	Indeno(1,2,3-cd)pyrene	340	U
53-70-3-----	Dibenz(a,h)anthracene	340	U
191-24-2-----	Benzo(g,h,i)perylene	340	U

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

RDS1

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ Method: 8260 SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 9516040

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VE5A6439.D

Level: (low/med) LOW Date Received: 11/7/95

% Moisture: not dec. 2 Date Analyzed: 11/17/95

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 1 Concentration Units: (ug/L or ug/Kg) ug/Kg

CAS Number	Compound Name	RT	Est. Conc.	Q
1.	Unknown	26.08	6	J
2.				
3.				
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030090

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RDS1

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ Method: 8260 SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 9516040

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VE5A6439.D

Level: (low/med) LOW Date Received: 11/7/95

% Moisture: not dec. 2 Date Analyzed: 11/17/95

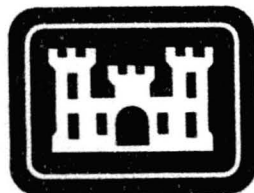
GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS No.	Compound	Concentration Units:		Q
		(ug/L or ug/Kg)	<u>ug/Kg</u>	
75-71-8	Dichlorodifluoromethane		5	U
74-87-3	Chloromethane		5	U
75-01-4	Vinyl Chloride		5	U
74-83-9	Bromomethane		5	U
75-00-3	Chloroethane		5	U
75-69-4	Trichlorofluoromethane		5	U
75-35-4	1,1-Dichloroethene		5	U
75-09-2	Methylene Chloride		5	U
156-60-5	trans-1,2-Dichloroethene		5	U
75-34-3	1,1-Dichloroethane		5	U
594-20-7	2,2-Dichloropropane		5	U
156-59-2	cis-1,2-Dichloroethene		5	U
67-66-3	Chloroform		5	U
74-97-5	Bromochloromethane		5	U
71-55-6	1,1,1-Trichloroethane		5	U
563-58-6	1,1-Dichloropropene		5	U
56-23-5	Carbon Tetrachloride		5	U
107-06-2	1,2-Dichloroethane		5	U
71-43-2	Benzene		5	U
79-01-6	Trichloroethene		5	U
78-87-5	1,2-Dichloropropane		5	U
75-27-4	Bromodichloromethane		5	U
74-95-3	Dibromomethane		5	U
108-88-3	Toluene		5	U
79-00-5	1,1,2-Trichloroethane		5	U
106-93-4	1,2-Dibromoethane(EDB)		5	U
142-28-9	1,3-Dichloropropane		5	U
127-18-4	Tetrachloroethene		5	U
124-48-1	Chlorodibromomethane		5	U
108-90-7	Chlorobenzene		5	U
630-20-6	1,1,1,2-Tetrachloroethane		5	U
100-41-4	Ethylbenzene		5	U
106-42-3	m&p Xylenes		5	U

APPENDIX B

SITE CHARACTERIZATION REPORT – Golder Associates



Prepared for:
Fort Worth District
Army Corps of Engineers
and
Directorate of Environment
Fort Bliss, Texas

Site Characterization Rubble Dump/Spill Site Fort Bliss, Texas

**Final Report
January 1999**



Prepared by:



**Golder
Associates**

Albuquerque, New Mexico

In Association with:
DBS-JV/Bohannon-Huston, Inc.
Albuquerque, New Mexico



7 January, 1999

Fort Worth District
Army Corps of Engineers
P.O. Box 17300
Fort Worth, TX 76102

ATTN: HENRY KASTEN

RE: Final Report: Site Characterization Rubble Dump/Spill Site, Fort Bliss, Texas

Dear Henry:

On behalf of DBS Joint Venture (Bohannon-Huston, Inc.), Golder Associates Inc. (Golder) is pleased to provide the Fort Worth District Army Corps of Engineers with the included 5 copies of the Final Report entitled Site Characterization Rubble Dump/Spill Site, Fort Bliss, Texas. With the submittal of this report DBS Joint Venture has completed all requirements called out in the Scope of Work for contract DACA63-95-D-0052, delivery order no. 0012.

During the field investigation Golder conducted waste pile mapping beyond the stated 200 feet east and west of the Power Line Road. This mapping, beyond that called for in the Scope of Work, was necessary to complete volumetric calculations on rubble piles which exist along side dirt roads. In addition, a detailed section describing several engineering control methods to limit access to the site has been added to the report at the request of Mr. Kelly Blough. Golder feels that this additional information provides a more complete understanding of the nature and volume of wastes at the site and necessary measures to restrict access.

We hope this report meets your needs, the needs of Fort Bliss as well as the TNRCC. If we may be of further service on this project or others please do not hesitate to call.

Sincerely,

GOLDER ASSOCIATES INC.

R. Bruce Hallett, Ph.D.
Project Manager

cc: G. Walhood (BHI, 1 copy of report)

EXECUTIVE SUMMARY

Site characterization activities were successfully conducted at the Rubble Dump/Spill Site during August 1997 in accordance with the approved Work Plan and Health and Safety Plan. The objectives of these activities were to identify and quantify the presence of hazardous substances in soil, identify and quantify the presence of asbestos in floor tiles and roofing shingles, map and describe the rubble piles, prepare a cost estimate for the removal and proper disposal of illegally dumped material, and identify potential engineering controls to limit future access to the site.

Of the 50 suspected asbestos containing material samples that were collected, 26 samples contained visible quantities of asbestos; 25 of these samples were floor tiles and one was tar paper roofing material. Small quantities of VOCs (acetone, 2-butanone, 4-methyl-2-pentanone, and toluene) were detected in 4 of the 18 soil samples. Concentrations of all VOC analytes are 4 to 6 orders of magnitude lower than TNRCC's Medium Specific Concentrations for residential and industrial land use. There were no SVOCs detected in the soil samples, however, there are problems in interpreting the detected analyte concentrations on several samples because of the field sampling objectives and laboratory sample preparation methods.

Ninety-one stations containing tar paper roofing material and floor tiles were mapped and described. With the exception of one pile, all tar paper roofing material is considered non-hazardous. All floor tile piles are considered to contain asbestos and are therefore classified as regulated waste. A total of 70 stations containing non-hazardous construction/demolition debris (i.e., rubble) were mapped and described. This material consists primarily of landscaping rocks, yard brush, household trash, etc.

There is an estimated 9 yd³ of asbestos containing material and 1200 yd³ of various rubble types including landscaping rock, concrete, yard brush, tires, glass, empty paint cans, and household trash. The total volume of tar paper roofing material is estimated at 136 yd³. The analytical results from soil samples collected in this study are unclear in the level of VOC and SVOC contamination, however, it is recommended that the estimated 3 yd³ of stained soil be removed and properly disposed.

New engineering control methods are proposed for implementation in order to curtail future illegal dumping in the area. Dirt barricades, concrete barricades, and chain link fence were evaluated as possible solutions, however, it is recommended that barbed wire fencing and "NO DUMPING" signs be used, which will provide the most effective, long term, cost-effective solution to prevent future illegal dumping at this site.

The cost of removal and disposal of the asbestos containing material to a permitted disposal facility is estimated at \$5,154. The cost of removal and disposal of the stained soil to an appropriately permitted facility is estimated at \$3,000. The range of cost for the removal of all rubble to a commercial waste landfill is estimated at \$20,800 to \$56,700.

Based upon the site characterization activities conducted at the Rubble Dump/Spill Site, the following actions are recommended to remediate and protect the site:

- 1) Remove and dispose of all asbestos containing material (the bulk of which is floor tiles) at a permitted disposal facility;
- 2) Remove and dispose of all non-hazardous construction/demolition material, tar paper roofing material, yard brush, household trash, etc., at the Fort Bliss landfill;
- 3) Remove and dispose of all stained soil to a properly permitted treatment/disposal facility; and
- 4) Construct a barbed wire fence and place "NO DUMPING" signs along Montana Avenue and adjacent to the OSTA access road to prevent/deter future illegal dumping at the site.

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APPENDICES

Appendix A Detailed Statement of Work: Site Characterization of Contaminated Soil and Waste Materials, Power Line Road Rubble Dump/Spill Site, Fort Bliss Texas

Appendix B USAEHA 1988 Survey and July 1989 Site Survey

Appendix C Sample Collection Logs

Appendix D Station Description Sheets

Appendix E Asbestos Sample Analytical Data

Appendix F Soil VOC and SVOC Sample Analytical Data

Appendix G Field Photographs

Appendix H Data Validation Supporting Documentation

Appendix I Safety Kleen Asbestos Removal Cost Estimate

ACRONYMS AND DEFINITIONS

CESWF	U.S. Army Corps of Engineers, Fort Worth District
CFR	Code of Federal Regulations
CRQL	Contractor Required Quantitation Limits
DOE	Directorate of Environment
EPA	Environmental Protection Agency
MRD	Missouri River District
PPE	Personal protective equipment
PA	Preliminary Assessment
QC	Quality Control
RCRA	Resource Conservation and Recovery Act
SVOC	Semivolatile organic compound
SWDL	Southwestern Division Laboratory
TNRCC	Texas Natural Resource Conservation Commission
TPH	Total petroleum hydrocarbon
VOC	Volatile organic compound

1.0 INTRODUCTION

During August 1997, site characterization activities were conducted at the Rubble Dump/Spill Site at Fort Bliss, Texas for the Fort Worth District Army Corps of Engineers (CESWF) Office, under contract DACA63-95-D-0052, delivery order no. 0012. This work was performed by Golder Associates Inc. (Golder) under subcontract to DBS Joint Venture. The objectives of this site characterization were to identify and quantify the presence of hazardous substances in soil, identify and quantify the presence of asbestos in floor tile and tar paper roofing material, map and describe the rubble piles, prepare a cost estimate for the removal and proper disposal of illegally dumped material, and identify potential engineering controls to limit future access to the site.

The site characterization activities were successfully conducted in accordance with the Work Plan (Golder Associates Inc., 1997a) and Health and Safety Plan (Golder Associates Inc., 1997b). These plans were reviewed and approved by CESWF and the Fort Bliss Directorate of Environment (DOE). All laboratory analyses were performed in accordance with approved Environmental Protection Agency (EPA) test methods by a Missouri River District (MRD) validated analytical laboratory. Disposal cost estimates are based on the estimated volumes of the different waste types, local labor costs, and estimated duration of the removal work.

Execution of this delivery order included the following tasks:

- 1) Preparation of a Work Plan and Health and Safety Plan
- 2) Review of existing site data and aerial photographs;
- 3) Collection and analysis of suspected asbestos containing materials;
- 4) Collection and analysis of surface and subsurface soil samples at spill sites;
- 5) Location mapping of debris piles;
- 6) Waste volume estimation;
- 7) Identification of potential engineering controls to limit access to the site;
- 8) Preparation of a cost estimate for removal and disposal of illegally dumped material;
and
- 9) Preparation of this report which documents the results of the above tasks.

2.0 PREPARATION OF WORK PLAN AND HEALTH AND SAFETY PLAN

A Draft Work Plan containing a Sampling and Analysis Plan was submitted in July 1997 in accordance with Section 3.3 of the Statement of Work (Appendix A). This plan was reviewed by Kelly Blough of DOE and Beverly Post of CESWF. Comments were faxed to the Golder office on 23 July, 1997. The comments were addressed by Golder and a revised Work Plan was submitted on 29 July, 1997 and subsequently approved.

A Draft Health and Safety Plan was submitted in July 1997 in accordance with Section 3.4 of the Statement of Work (Appendix A). This plan was reviewed internally by Golder Certified Industrial Hygienist, Michael Cannon prior to being sent the DOE and CESWF. Dennis Ostrander, Safety and Occupational Health Specialist with the Fort Bliss Safety Office reviewed the Draft Health and Safety Plan and provided several recommendations for revision. Madeline Morgan, Industrial Hygienist with the CESWF also reviewed the Draft Health and Safety Plan and recommended several revisions. Comments were faxed to the Golder office. The comments were addressed by Golder and a revised Health and Safety Plan was submitted on 22 July, 1997 and was subsequently approved.

3.0 REVIEW OF EXISTING DATA

3.1 Site Location

The power line road Rubble Dump/Spill Site is located in El Paso County in far west Texas on Fort Bliss property in the area immediately north of Montana Avenue at latitude $31^{\circ} 48' 05''$ north and longitude $106^{\circ} 18' 50''$ west (Figure 1). This site consists of a large discontinuous area of unauthorized and illegal dumping and has uncontrolled public access. According to a DOE report (Appendix B) the initial start of dumping is not known. Over the 21 month time period between the field work for a Preliminary Assessment (PA; in November 1995) and this field investigation (August 1997) illegal dumping appeared to be continuing and consisted primarily of landscaping debris (e.g., landscaping rock, yard brush) and construction/demolition materials (e.g., concrete blocks, wood paneling, roofing shingles).

The area of investigation as defined in the Statement of Work for this delivery order (Appendix A) is an approximately 1 mile stretch of dirt road between power poles 1 through 9 and 200 feet east and west of the road (Figure 2). This area of investigation covers approximately 48 acres, however, nearly twice that acreage was visited and mapped in order to evaluate the complete extent of illegal dumping at this site.

3.2 Historical Data

A review of existing Fort Bliss historical records was conducted to determine the use and past environmental studies conducted at the site. Summarized below in chronological order is a history of the use and study of the Rubble Dump/Spill Site:

- 1988 - Site listed in a Fort Bliss environmental database indicating the site's location, description, operation dates, waste description, suspected releases, and environmental recommendations (Appendix B).
- 1989 - Site listed in a Fort Bliss environmental database stating similar information as above, as well as scheduling a site investigation for April 1995 (Appendix B).
- 1995 (Dec.) - A PA of the site reports soils contaminated with semivolatile organic compounds (SVOC), TPH, and oil and grease, and several ceiling and floor tiles containing asbestos (Golder Federal Services, 1997).

In the PA a number of SVOCs were detected in 7 of the 15 soil samples collected at 4 areas of stained soil; TPH and oil and grease were detected in all 15 of the soil samples; and asbestos was detected in 2 floor tile samples but was not detected in 8 roofing shingle samples.

The PA report found only 1 of the 7 contaminated soil samples exceeded both the EPA residential and commercial/industrial land use standards for dibenzo[a,h]anthracene (EPA,

1995). This same sample was also above EPA's residential land use standard for benzo[a]anthracene, benzo[b]fluoranthene, benzo[a]pyrene, and indeno[1,2,3-cd]pyrene but below the commercial/industrial land use standard for these compounds.

Other compounds which were detected in the soils but were below residential and commercial/industrial land use standards for the Texas Natural Resource Conservation Commission (TNRCC) and/or EPA are:

- indeno[1,2,3-cd]pyrene
- naphthalene
- bis(2-ethylhexyl)phthalate
- benzo[a]anthracene
- chrysene
- benzo[b]fluoranthene
- fluoranthene
- pyrene
- di-n-octyl phthalate
- benzo[k]fluoranthene
- benzo[a]pyrene
- acenaphthene
- fluorene
- anthracene
- butylbenzyl phthalate
- dibenzo(a,h)anthracene

The following compounds were detected at the Rubble Dump/Spill Site but are not currently listed in the TNRCC's "Medium Specific Concentrations for Health-Based Closure/Remediation" table or EPA's "Risk-Based Concentration" table (EPA, 1995):

- phenanthrene
- benzo[g,h,i]perylene
- 2-methylnaphthalene
- acenaphthylene
- TPH
- oil and grease

3.3 Aerial Photograph Review

During the Fall of 1995, in preparation for the PA, all available aerial photographs were searched in the Fort Bliss DOE archives with the assistance of Ms. Kelly Poche. This search did not turn up any relevant photographs.

In the Fall of 1996 a database search of available aerial photographic images was conducted by the University of New Mexico's Earth Data Analysis Center in

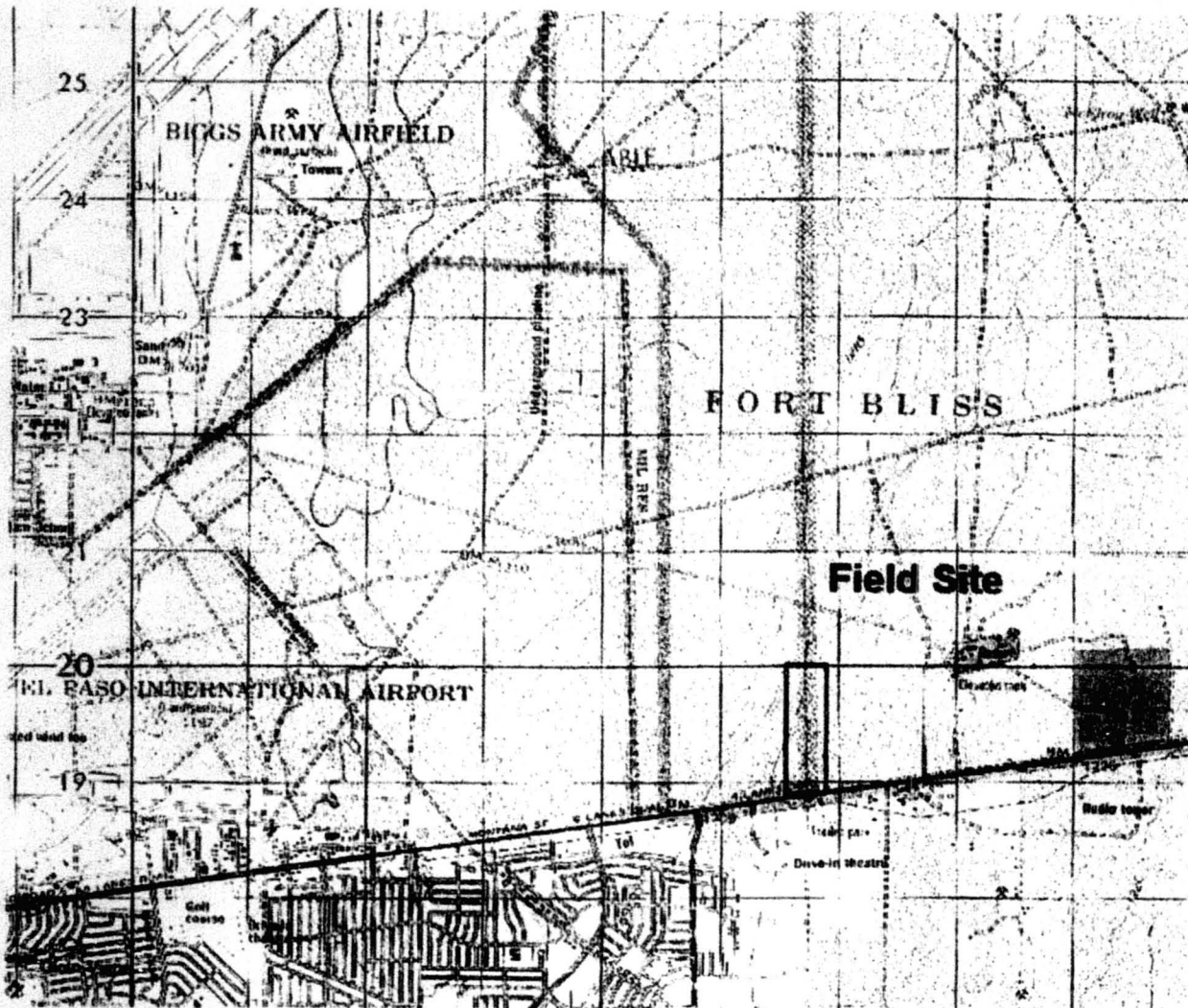


Figure 1. Topographic location map of the Rubble Dump/Spill field site. Each square equals 1 square mile (after Defense Mapping Agency, 1978).

Albuquerque, New Mexico. Their search provided a list of 66 images ranging from color infrared to black and white stereo pairs. The images listed in Table 1 were evaluated because their scale was most appropriate for this study.

This evaluation concluded that at a scale of 1:20,000 to 1:24,000 the resolution of individual waste piles was not possible and limited these images from being used to study the history of illegal dumping.

A final search was conducted with the City of El Paso Planning, Research, and Development Department which identified a 1986 Cooper Aerial photograph was taken at a scale of 1:12,000. This photo had sufficient resolution to use as a field map (see Plate 1), however, the resolution is not great enough to identify individual waste piles or evaluate a chronologic evolution of illegal dumping activities. Cooper Aerial had also taken one photo of the study area in October 1995. This photo is at a scale of 1:24,000 and does not provide adequate resolution for waste pile mapping.

The various searches for aerial photographic coverage of the Rubble Dump/Spill Site were successful in finding a photograph suitable as a field map. However, no existing photographs were at a large enough scale to evaluate the history and patterns of illegal dumping.

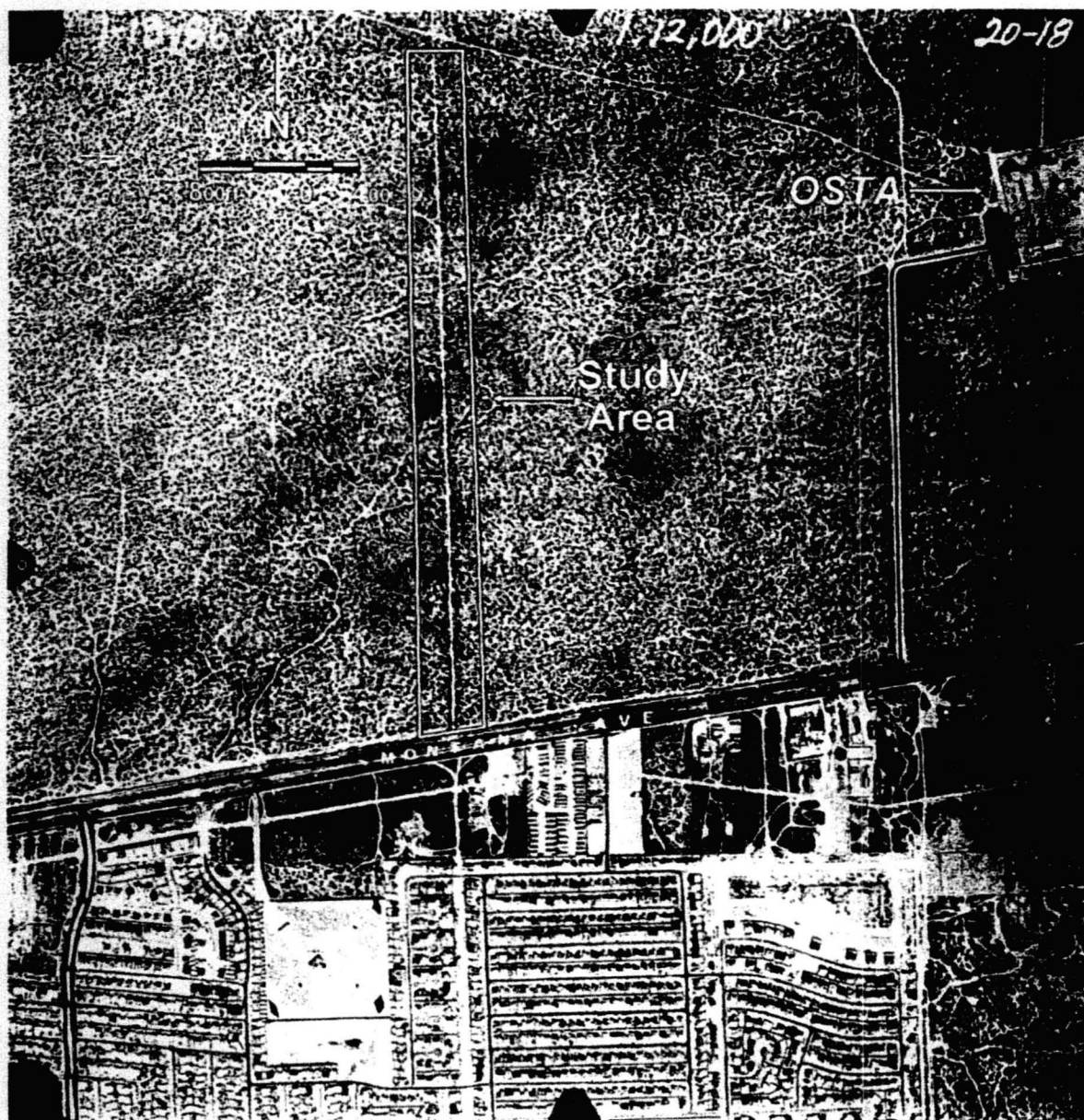


Figure 2. Aerial photograph of the Rubble Dump/Spill field site. The boundary of the study area is outlined in white (Cooper Aerial Survey, 1986).

Agency	Date	Scale	Film Type
U.S. Geological Survey	Sept. 1991	1:24,000	Color
Texas Dept. of Transportation	May 1988	1:24,000	Black and White
Cooper Aerial	April 1981	1:20,000	Black and White
Texas Dept. of Transportation	Sept. 1979	1:24,000	Black and White

Table 1. Listing of aerial photographs reviewed.

4.0 DESCRIPTION OF FIELD ACTIVITIES

4.1 Site Reconnaissance

A site reconnaissance was conducted 11-12 August, 1997 prior to sampling to confirm the results of the PA (Golder Federal Services, 1997) and determine if additional wastes had been dumped since the PA field investigation was conducted in November 1995. Rubble piles of suspected asbestos containing floor tiles and tar paper roofing materials were marked with orange pin flags. Rubble piles of landscaping and construction/demolition materials were marked with green pin flags. Stained soil locations were marked with pink pin flags.

4.2 Floor Tiles and Tar Paper Roofing Material Sampling

The sampling effort concentrated on collecting samples from items such as floor tiles and less on roofing shingles, as none of the 8 roofing shingles collected for the PA contained asbestos. However, several old piles of roofing material, which appeared to have a fibrous texture, were sampled.

A Sample Collection Form (Appendix C) was completed for each asbestos sample collected. Information recorded included:

- Date
- Time
- Sample ID
- Sampling Location
- Media
- Station
- Sample Type
- Sample Depth
- Sample Description
- Aliquot Amount
- Sample Container
- Preservation Method
- Sampler (signature and date)

All sampling locations were staked and numbered with orange pin flags for subsequent field identification, and plotted on a field map. Sample preparation of suspected asbestos containing material consisted of placing the sample in a plastic ziplock bag. All asbestos sampling was conducted in Level D personal protective equipment (PPE), in accordance with the Health and Safety Plan (Golder Associates Inc., 1997b).

4.3 Soil Sampling

A priority was placed on collecting soil samples from previously undefined and unsampled spill sites. Only two new spill sites were discovered. Additional samples were collected from topographic depressions (e.g., dips in the road or pot holes) to evaluate if any organic compounds had migrated from adjacent spill sites. Samples were also collected from spills previously identified in the PA in order to determine the vertical depth of contamination. All soil sampling was conducted in Level D PPE, in accordance with the Health and Safety Plan (Golder Associates Inc., 1997b).

A Sample Collection Form (Appendix C) was completed for each soil sample collected. The information recorded on each form is the same as previously described for the suspected asbestos containing samples in Section 4.2.

All soil sampling locations were staked and numbered with pink pin flags for subsequent field identification, and plotted on a field map. All samples were collected utilizing stainless steel sampling spoons and stainless steel mixing bowls.

All SVOC samples were thoroughly mixed and homogenized in a clean, stainless steel mixing bowl. Following homogenization, the SVOC soil sample was placed in a 125 ml glass jar. All VOC samples, upon collection, were immediately placed in 125 ml amber glass sample containers. Each VOC jar was filled to capacity to eliminate any headspace. All VOC and SVOC samples were labeled, sealed, and shipped so that the integrity of the samples was maintained. Each VOC and SVOC sample jar was labeled with the sample identification number, date and time sampled, analytical parameter, preservation method, and sampler's initials.

All sampling equipment was decontaminated between each use to prevent cross contamination, as described below.

4.4 Waste Management

Two types of waste were generated during asbestos and soil sampling activities. These included:

- PPE; and
- decontamination fluids.

PPE and disposable sampling supplies (e.g., latex gloves, plastic bags) utilized during field activities were collected in several large plastic ziplock bags. At the end of the project these bags were disposed of at the city landfill.

All reusable sampling equipment such as the stainless steel bowls and stainless steel sampling spoons were decontaminated between samples to prevent cross contamination. Two spray bottles were filled, one with an AlconoxTM/deionized water mixture and the

other with only deionized water. After each sampling episode the bowl and spoon were washed using the Alconox™/deionized water mixture and a paper towel, then double rinsed with deionized water and allowed to air dry. Decontamination fluid was captured in a large wash tub and allowed to completely evaporate over a period of two days. All paper towels used in the decontamination process were placed inside a ziplock plastic bag which was disposed at the city landfill.

4.5 Mapping of Debris Piles and Spills

All rubble piles within the study area boundary were flagged and plotted on a 36-in wide aerial photograph (Plate 1). A Station Description Sheet (Appendix D) was completed for each waste pile and spill site and the following information was recorded:

- Station Number
- Waste Description
- Volume Estimation
- Hazardous/Non-Hazardous Constituents

Individual rubble piles were isolated and easily distinguished between power poles 7 and 9 in most cases and one Station Description Sheet was completed for each rubble pile. Between power poles 1 and 7 the rubble piles were more concentrated and several piles were typically grouped on one Station Description Sheet. To the degree possible the "Hazardous/Non-Hazardous" category was determined while in the field. If soil or asbestos samples were being collected from that station, then the "Hazardous/Non-Hazardous" category was not completed until the analytical results were obtained.

Waste materials were categorized in the field into the different types of Hazardous/Regulated or Non-Hazardous materials listed in Table 2.

During field sampling sufficient information was gathered on suspected asbestos containing material to classify it as either friable or nonfriable (TNRCC, 1996a). Contaminated soils were classified as hazardous wastes (based on RCRA definition, 40 CFR 261) after analytical results had been received. Form codes were assigned to the various waste materials based on "Guidelines for the Classification and Coding of Industrial Waste and Hazardous Wastes (TNRCC, 1995).

4.6 Volume Estimation

Volume estimates of the rubble piles and stained soil were tabulated during the site reconnaissance phase of the field project. Volumes were visually estimated based on the number of 55-gallon drums needed to contain the material and were recorded on Station Description Sheets (Appendix D).

Hazardous/Regulated	Non-Hazardous
Asbestos containing material (analytical results required)	Construction and/or demolition debris (including tar paper roofing material)
Contaminated soils (analytical results required)	All other rubble (i.e., household trash, glass, landscaping debris, plastic, furniture, and wood)

Table 2. List of Hazardous/Regulated and Non-Hazardous material categories identified during the field investigation.

5.0 SAMPLE ANALYSES

5.1 Asbestos

All suspected asbestos containing samples were shipped to Paragon Analytics, Inc., in Fort Collins, Colorado for analysis by EPA Method 600/R-93/116. This is a visual estimation method using electron microscopy. Analyses were completed by Reservoirs Environmental Services, Inc. a subconsultant to Paragon Analytics, Inc. The analytical results are included in Appendix E.

5.2 Soil

All soil samples were shipped to Paragon Analytics, Inc., in Fort Collins, Colorado for analysis of VOCs using SW-846 Method 8260 and SVOCs using SW-846 Method 8270. Paragon Analytics, Inc. is MRD validated to perform both of these analyses. The analytical results are included in Appendix F.

On 21 August, 1997 two quality control (QC) soil samples (QA-1 and QA-2) were collected. Because of potential shipping delays caused by the UPS strike and in order to assure sample delivery, these samples were shipped via Southwest Airline air freight under chain of custody to the U.S. Army Corps of Engineers Southwestern Division Laboratory (SWDL) in Dallas, Texas and held for counter pick-up at Dallas Love Field. Both samples were marked on the chain of custody for analysis of VOCs using SW-846 Method 8260 and SVOCs using SW-846 Method 8270.

6.0 ANALYTICAL RESULTS

6.1 Asbestos

Results for asbestos analyses are presented in Table 3. Fifty samples of floor tile, roofing material and sheet rock were sampled. Chrysotile, one form of asbestos, was detected in 25 of the 30 floor tile samples, in 1 of the 17 roofing material samples, and in none of the 3 sheet rock samples. Floor tiles were analyzed both on the top and bottom of the sample (see Layer A and B in Table 3). Asbestos concentration ranges from trace to 35% for the 25 floor tile samples that tested positive for asbestos. The one roofing material sample contained 25% asbestos.

According to TNRCC regulations (TNRCC, 1996a) "non-friable asbestos-containing material that contains greater than 1 percent asbestos but has been subjected to sanding, grinding, cutting, or abrading, or that has a high probability of being reduced to powder in the course of demolition or renovation" is considered a regulated waste. Of the 26 asbestos containing samples, all are non-friable, greater than 1 percent asbestos, have been subjected to cutting, and are therefore considered a regulated waste. All samples and their associated waste piles have been assigned a TNRCC Form Code of 311-1 (classification of TNRCC, 1995) indicating the waste is asbestos solids and/or debris (311 designation) and a non-hazardous industrial Class 1 waste (1 designation). All samples testing positive for asbestos and their associated waste piles are further classified as a Category I non-friable asbestos-containing material (per TNRCC, 1996a).

6.2 Soil

The detectable concentrations of all organic analytes are presented in Table 4. VOCs were detected in 4 of the 18 soil samples. The most common analyte detected is acetone, occurring in 3 of the 4 samples and ranging in concentration from 38 to 230 $\mu\text{g/kg}$. Toluene (6.8 $\mu\text{g/kg}$) was found in one sample and 2-butanone (71 $\mu\text{g/kg}$) and 4-methyl-2-pentanone (120 $\mu\text{g/kg}$) were found in the same sample that had the highest acetone concentration. Methylene chloride was detected in every soil sample and is considered to be a laboratory contaminant as it also appears in the method blank (Appendix F). All methylene chloride results have been flagged with a "B" in Table 4 indicating that this analyte was present in the method blank.

No SVOCs were detected in any of the 18 soil samples collected from the Rubble Dump/Spill Site. However, because of the potential high concentrations of SVOCs, Paragon Analytics, Inc., needed to dilute the following samples prior to analysis to avoid gas chromatograph machine failure:

S-1, S-2, S-4, S-6, S-9, S-11, S-13, and S-15.

Although there were non-detects for all of the analytes in each of the above samples, individual quantitation reports and spectrographs show peaks of some analytes, albeit, at or below the (elevated) reporting limit. These spectrographs indicate contamination is present but not quantifiable. In an effort to identify the contaminant Paragon Analytics, Inc., the contract laboratory, can reprocess the data to determine tentatively identified compounds (TICs). However, the processing will likely only resolve the spectra to a class of compounds and not specifically identify individual compounds, therefore it is felt the reprocessing will be of little value. The quantitation reports and spectrographs are included in Appendix F.

Only 18 soil samples were collected, instead of the 25 proposed in the Work Plan. The decision to collect fewer samples was based on the field information available after the site area had been mapped and only two new spill sites had been discovered. The paucity of new spill sites and the difficulty of identifying the old spill sites from the 1995 PA made it impossible to complete the proposed soil sampling. The two new spills, Stations P-2 and P-3, appear to be motor oil spills (Appendix G) and represent a small volume of waste.

An attempt was made at several locations to evaluate the vertical leaching of individual spills by collected both a near surface sample (0-2 inches depth) and a deeper sample (4-6 inches depth). This was done at Station P-2 (samples S-1 and S-3), P-3 (samples S-9 and S-10), O-52 (samples S-13 and S-14), P-4 (samples S-15 and S-16), and O-80 (samples S-17 and S-18). Samples S-1 and S-3 at Station P-2 did not contain organic compounds. For the other 4 stations, VOCs were detected in the surface sample (0-2 inch depth), but in every case the deeper sample contained no VOCs. This indicates that VOCs are currently not leaching below the surface spill.

Four samples, S-4, S-5, S-6, and S-11 were collected near rubble piles at lower elevations or in depressions. These samples were collected to determine if seasonal rains could transport VOCs and SVOCs away from their originating rubble pile. No contaminants were detected in any of these 4 samples indicating a low probability of VOC transport by this mechanism.

6.3 Quality Assurance/Quality Control

6.3.1 Asbestos

No quality control (QC) samples were required to be collected for asbestos per the Work Plan.

6.3.2 Soil

Two sets of QC soil samples were collected and sent to Paragon Analytics, Inc. for VOC and SVOC analyses. Analytical results are presented in Table 4. One set was collected in triplicate from station P-2 at a depth of 0-2 inches, with one sample submitted as an

unknown (S-1), the second sample submitted as a QC duplicate (S-2), and a third sample submitted to SWDL (QA-1). Results for samples S-1 and S-2 showed that no VOCs and SVOCs were detected (Table 4). The second set of QC soil triplicates included samples S-7, S-8, and QA-2. Sample S-7 was submitted as an unknown and S-8 as a QC duplicate. QA-2 was submitted to SWDL. Results for samples S-7 and S-8 showed that no VOCs and SVOCs were detected (Table 4).

Two QC soil sample were collected and shipped to the SWDL, as discussed in Section 5.2. These two samples QA-1 and QA-2 were triplicates of the samples collected above. The analytical results for these two samples are not included in this report.

6.3.3 Trip Blank

One trip blank was analyzed by Paragon Analytics, Inc. for VOCs. This trip blank was prepared by Paragon prior to the beginning of field sampling, shipped to Golder in a sample cooler, and kept in the cooler throughout the field project. No VOCs were detected in the trip blank (Table 4). A method blank, different from the trip blank, did detect methylene chloride as described in Section 6.2.

6.4 Data Validation

This section presents the results of data validation of the data packages from Paragon Analytical, Inc. Sample information is summarized in Table 5.

Data validation and analytical data management was conducted in accordance with the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (EPA, 1993) and Golder Associates technical procedure TP-2.2-12 (Golder Associates Inc., 1995), respectively. The data review process provides information on analytical limitations of the data based on specific quality control (QC) criteria outlined in the referenced documents. Attachments 1 and 2 in Appendix H provide the following information:

Attachment 1. Glossary of Data Reporting Qualifiers

Attachment 2. Summary of Data Qualifications

6.4.1 Data Quality Objectives

This section presents a summary of the data quality for this project in terms of the referenced validation criteria.

Precision. Goals for precision were met, with the exception of those deficiencies listed below.

Accuracy. Goals for accuracy were met, with the exception of those deficiencies listed below.

Completeness. The data package was complete for all requested analyses. A total of 19 samples were validated in this data package with a total of 2572 determinations reported, all of which were deemed valid. This results in a completeness of 100 percent.

6.4.2 Major Deficiencies

No major deficiencies were identified during data validation which required qualification of data as unusable.

6.4.3 Minor Deficiencies

The following minor deficiencies were identified during data validation which required qualification of data.

VOC Initial Calibration

The initial calibration percent RSD was greater than 30% for the following constituents: vinyl acetate, chloromethane, vinyl chloride, acetone, methylene chloride, 2-chloroethyl vinyl ether, trichlorofluoromethane, 2-butanone, 4-methyl-2-pentanone, m,p-xylene, and naphthalene. Attachments 1 and 2 of Appendix H provide a summary of the samples affected, data qualifications applied, and supporting documentation.

VOC Continuing Calibration

The continuing calibration percent difference was greater than 25% for the following constituents: trichlorofluoromethane, methyl-t-butyl ether, vinyl acetate, 2-chloroethyl vinyl ether, 1,3-dichloropropane, 1,2-dibromoethane, 1,2,3 trichloropropane. Attachments 1 and 2 of Appendix H provide a summary of the samples affected, data qualifications applied, and supporting documentation.

SVOC Continuing Calibration

The continuing calibration percent difference was greater than 25% for the following constituents: 2,4-dinitrophenol, 4-nitrophenol, 4-nitroaniline, bis(2-ethylhexyl)phthalate, indeno(1,2,3-c,d)pyrene, dibenzo(a,h)anthracene, benzo(g,h,i)perylene. Attachments 1 and 2 of Appendix H provide a summary of the samples affected, data qualifications applied, and supporting documentation.

VOC Method Blank

Methylene chloride was detected in the method blank so sample results less than 10 times the associated blank result were qualified B and raised to the detection limit. Attachments

1 and 2 of Appendix H provide a summary of the samples affected, data qualifications applied, and supporting documentation.

VOC Surrogates

The surrogate recoveries were outside the accuracy control limits for samples S-4, S-6, S-7, S-9, S-11, S-15, and S-17. Attachments 1 and 2 of Appendix H provide a summary of the samples affected, data qualifications applied, and supporting documentation.

VOC Internal Standards

The internal standard areas were outside the control limits for samples S-2, S-4, S-17, S-15, S-6, S-7, S-9, S-10, S-11, S-12, and S-13. Attachments 1 and 2 of Appendix H provide a summary of the samples affected, data qualifications applied, and supporting documentation.

SVOC Internal Standards

The internal standard areas were outside the control limits for samples S-13, S-11, S-10, S-6, S-18, S-17, S-16, S-15, and S-14. Attachments 1 and 2 of Appendix H provide a summary of the samples affected, data qualifications applied, and supporting documentation.

6.4.4 Field QC

Trip Blanks

One VOA trip blank was identified and analyzed. No compounds were detected.

6.4.5 Tentatively Identified Compounds

No tentatively identified compounds (TICs) were reported by the laboratory.

6.4.6 Quantitation Limits and Reported Results

CRQLs have not been established for this project, therefore, detection limits have not been evaluated. According to validation procedures qualification of data is not required.

The analytical data discussed in this report in support of the Rubble Dump/Spill Site characterization are acceptable for their intended use.

Table 3. Continued...

Sample #	Station #	Layer	Material	Physical Description	Asbestos Method 600/R-93/116		Regulated ¹	TNRCC Form Code ²	Category ³
					Mineral	Visual Estimate (%)			
A-26	O-32	A	Floor tile	Black fibrous tile	Chrysotile	15	Yes	311-1	I
		B		Brown granular cement-like tile	Chrysotile	15			
A-27	O-34	A	Floor tile	Tan granular tile	Chrysotile	5	Yes	311-1	I
A-28	O-34	A	Roofing	Black fibrous granular tar		ND	No	390	
A-29	O-38	A	Floor tile	White/green tile	Chrysotile	5	Yes	311-1	I
A-30	O-38	A	Roofing	Black fibrous tar		ND	No	390	
A-31	O-39	A	Floor tile	Gray w/white swirl tile		ND	No	390	
A-32	O-54	A	Floor tile	Black tar		ND	Yes	311-1	I
		B		Gray/white tile	Chrysotile	5			
A-33	O-53	A	Floor tile	Clear yellow resin		ND	No	390	
		B		White fibrous tile		ND			
		C		Black backing material		ND			
A-34	O-52	A	Floor tile	Black tar	Chrysotile	5	Yes	311-1	I
		B		Red fibrous tile	Chrysotile	20			
A-35	O-58	A	Floor tile	Black fibrous tar	Chrysotile	10	Yes	311-1	I
		B		Light red fibrous tar	Chrysotile	15			
A-36	O-58	A	Roofing	Black/brown fibrous material		ND	No	390	
A-37	O-59	A	Floor tile	Pink plaster w/light green paint	Chrysotile	2	Yes	311-1	I
		B		Red tile	Chrysotile	2			
A-38	O-68	A	Roofing	Black fibrous tar w/white material		ND	No	390	
A-39	O-61	A	Floor tile	White tile w/black backing material		ND	No	390	
A-40	G-65	A	Roofing	Black fibrous tar material	Chrysotile	25	Yes	311-1	I
A-41	O-75	A	Floor tile	White granular material	Chrysotile	2	Yes	311-1	I
A-42	O-75	A	Roofing	Black fibrous tar material w/red paint		ND	No	390	
A-43	O-74	A	Floor tile	Black fibrous tar	Chrysotile	15	Yes	311-1	I
		B		White tile	Chrysotile	2			
A-44	O-70	A	Floor tile	Blue tile		ND	No	390	
A-45	O-85	A	Floor tile	Black fibrous tar	Chrysotile	10	Yes	311-1	I
		B		Beige tile	Chrysotile	5			
A-46	O-84	A	Roofing	Black fibrous tar material		ND	No	390	
A-47	O-87	A	Roofing	Black fibrous tar material		ND	No	390	
A-48	O-87	A	Floor tile	Black fibrous tar	Chrysotile	8	Yes	311-1	I
		B		White tile	Chrysotile	5			
A-49	O-87	A	Floor tile	Red fibrous floor tile	Chrysotile	10	Yes	311-1	I
A-50	O-91	A	Floor tile	Gray cement-like fibrous material w/white paint	Chrysotile	25	Yes	311-1	I

ND - not detected; TR - trace

A, B, C - different sides or surfaces of the same sample

ε - Regulated vs. non-regulated based on definition in 30 TAC 330.2 (definitions)

¥ - 311-1 is asbestos solids and debris, Category 1 waste; 390 is nonhazardous concrete/cement/construction debris (TNRCC, 1995)

¢ - Category I includes gaskets, packing, resilient floor covering and asphalt roofing products (TNRCC, 1995)

Table 3. Asbestos analytical results.

Sample #	Station #	Layer	Material	Physical Description	Asbestos Method 600/R-93/116		Regulated ^L	TNRCC Form Code ^V	Category ^E
					Mineral	Visual Estimate (%)			
A-1	O-2	A	Floor tile	Brown fibrous material		ND	No	390	
		B		White material		ND			
A-2	O-5	A	Floor tile	Black fibrous tar	Chrysotile	10	Yes	311-1	I
		B		Off-white tile	Chrysotile	2			
A-3	O-6	A	Floor tile	Beige granular tile	Chrysotile	5	Yes	311-1	I
A-4	O-3	A	Floor tile	Black tar		TR	Yes	311-1	I
		B		White tile	Chrysotile	5			
A-5	O-12	A	Sheet rock	White fibrous plaster		ND	No	390	
A-6	O-13	A	Sheet rock	White fibrous plaster		ND	No	390	
A-7	O-9	A	Sheet rock	White fibrous plaster		ND	No	390	
A-8	O-11	A	Roofing	Black fibrous tar		ND	No	390	
A-9	O-7	A	Floor tile	Black tar	Chrysotile	2	Yes	311-1	I
		B		Gray fibrous granular tile	Chrysotile	15			
A-10	O-7	A	Floor tile	Black fibrous tar	Chrysotile	10	Yes	311-1	I
		B		Off-white tile	Chrysotile	2			
A-11	O-16	A	Roofing	Black fibrous tar w/green and white granular material		ND	No	390	
A-12	O-17	A	Floor tile	Green fibrous material w/black tar	Chrysotile	25	Yes	311-1	I
A-13	O-17	A	Roofing	Black fibrous tar w/white granular material		ND	No	390	
A-14	O-18	A	Floor tile	Brown fibrous cement-like material w/red paint	Chrysotile	35	Yes	311-1	I
A-15	O-18	A	Roofing	Black fibrous material		ND	No	390	
A-16	O-19	A	Roofing	Black fibrous tar w/white granular material		ND	No	390	
A-17	O-20	A	Floor tile	Black fibrous tar	Chrysotile	15	Yes	311-1	I
		B		Tan fibrous tile	Chrysotile	5			
A-18	O-20	A	Floor tile	Black fibrous tar	Chrysotile	20	Yes	311-1	I
		B		Gray/black fibrous tile	Chrysotile	20			
A-19	O-20	A	Floor tile	Black tar	Chrysotile	5	Yes	311-1	I
		B		Beige tile	Chrysotile	3			
A-20	O-14	A	Roofing	Black fibrous tar w/white granular material		ND	No	390	
A-21	O-15	A	Roofing	Black fibrous tar		ND	No	390	
A-22	O-29	A	Roofing	Black fibrous tar material w/white granular material		ND	No	390	
A-23	O-26	A	Floor tile	Black tar		ND	Yes	311-1	I
		B		Brown and white tile	Chrysotile	3			
A-24	O-26	A	Roofing	Black fibrous tar material w/brown and white granular material		ND	No	390	
A-25	O-40	A	Floor tile	Black fibrous tar	Chrysotile	20	Yes	311-1	I
		B		Gray granular cement-like tile	Chrysotile	15			

Table 4. Soil analytical data.

Sample #	Sample Depth (in)	Location	Physical Description	Volatile Organic Compounds EPA SW 846 Method 8260		TNRCC Form Code [£]	Semivolatile Organic Compounds EPA SW 846 Method 8270	
				Constituent	(µg/kg)		Constituent	(µg/kg)
S-1	0-2	Station P-2	stained, dark orangish-brown sand	methylene chloride	(J,B)			
S-2	0-2	Duplicate of S-1	stained, dark orangish-brown sand	methylene chloride	9 (B)			
S-3	4-6	Station P-2	stained, orangish-brown sand	methylene chloride	5.4 (B)			
S-4	surface	Station G-17, in the vicinity of a burned-out tire	brownish-black sand; run-off	methylene chloride	16 (B)			
S-5	0-2	Near station G-14, sample from a depression in the road (run-off from waste piles)	dark orangish-brown sand; run-off	methylene chloride	(J,B)			
S-6	0-2	Station O-30, sample taken down slope of a tar paper rubble pile	brown sand; run-off	methylene chloride	15 (B)			
				toluene	(J)			
S-7	0-2	Station O-29, sample taken in middle of dirt road	stained, medium black sand; same as RDS-27 site	methylene chloride	12 (B)			
S-8	0-2	Duplicate of S-7	orangish-brown sand	methylene chloride	(J,B)			
S-9	0-2	Station P-3, obvious motor oil spill	stained, brownish-black sand	acetone	230 (E)	301-H	bis(2-ethylhexyl)phthalate	(J)
				methylene chloride	11 (B)			
				2-butanone	71			
				4-methyl-2-pentanone	120			
				2-hexanone	(J)			
S-10	2-4	Station P-3, deeper than S-9, to evaluate leaching	orangish-brown sand	methylene chloride	7.4 (B)			
				4-methyl-2-pentanone	(J)			
S-11	0-2	Station O-47	medium black sand; run-off	methylene chloride	12 (B)			

Table 4. Continued...

Sample #	Sample Depth (in)	Location	Physical Description	Volatile Organic Compounds EPA SW 846 Method 8260		TNRCC Form Code ^E	Semivolatile Organic Compounds EPA SW 846 Method 8270	
				Constituent	(µg/kg)		Constituent	(µg/kg)
S-12	0-2	Station O-53, near empty paint cans	stained, brownish-black sand	methylene chloride	6.6 (B)			
S-13	0-1	Station O-52	medium black, crusted sand; same as RDS-13 site	acetone	54	301-H	bis(2-ethylhexyl)phthalate	(J)
				methylene chloride	9.7 (B)			
				2-butanone	(J)			
				toluene	(J)			
S-14	2-4	Station O-52, deeper than S-13 to evaluate leaching	orangish-brown sand	methylene chloride	(J,B)		bis(2-ethylhexyl)phthalate	(J)
S-15	0-1	Station P-4	medium brown, crusted sand; same as RDS-25 site	methylene chloride	19 (B)			
				toluene	6.8	301-H		
S-16	4	Station P-4, deeper than S-15 to evaluate leaching	orangish-brown sand	methylene chloride	(J,B)		bis(2-ethylhexyl)phthalate	(J)
S-17	0-1	Near station O-80	medium black, crusted sand; same as RDS-1 site	acetone	38	301-H	bis(2-ethylhexyl)phthalate	(J)
				methylene chloride	19 (B)			
				2-butanone	(J)			
				toluene	(J)			
S-18	4-6	Near station O-80, deeper than S-17 to evaluate leaching	orangish-brown sand	methylene chloride	5.6 (B)		bis(2-ethylhexyl)phthalate	(J)
QA Sample								
Trip Blank			water	methylene chloride	(J,B)			

Result Qualifiers:

B - analyte is found in the method blank as well as in the sample; indicates blank contamination

E - concentration exceeds the upper level of the calibration range of the instrument

J - estimated value

£ - 301-H is soil contaminated with organics and a hazardous classification (TNRCC, 1995)

SAMPLE ID	COMMENTS	ANALYSIS	MEDIA
S-1		VOA 8260/SVOA 8270	SOIL
S-2		VOA 8260/SVOA 8270	SOIL
S-3		VOA 8260/SVOA 8270	SOIL
S-4		VOA 8260/SVOA 8270	SOIL
S-5		VOA 8260/SVOA 8270	SOIL
S-6		VOA 8260/SVOA 8270	SOIL
S-7		VOA 8260/SVOA 8270	SOIL
S-8		VOA 8260/SVOA 8270	SOIL
S-9		VOA 8260/SVOA 8270	SOIL
S-10		VOA 8260/SVOA 8270	SOIL
S-11		VOA 8260/SVOA 8270	SOIL
S-12		VOA 8260/SVOA 8270	SOIL
S-13		VOA 8260/SVOA 8270	SOIL
S-14		VOA 8260/SVOA 8270	SOIL
S-15		VOA 8260/SVOA 8270	SOIL
S-16		VOA 8260/SVOA 8270	SOIL
S-17		VOA 8260/SVOA 8270	SOIL
S-18		VOA 8260/SVOA 8270	SOIL
Trip Blank	TRIP BLANK	VOA 8260	WATER

Table 5. Analyses performed on each soil sample.

7.0 COMPARISON OF SOIL RESULTS WITH TNRCC ACTION LEVELS

The soil analytical results are compared to TNRCC's Medium Specific Concentration for Risk Reduction Standard 2 (TNRCC, 1993) in Table 6. Medium specific concentrations for acetone 2-butanone, 4-methyl-2-pentanone, and toluene, four analytes detected in this investigation, are 4 to 6 orders of magnitude lower than the stated residential and industrial land use soil values and 3 to 5 orders of magnitude lower than the stated groundwater protection standards for both residential and industrial water use. Results from PA soil samples are discussed in Section 3.2.

Sample #	VOCs		TNRCC Action Levels [£]		TNRCC Action Levels [£]	
	EPA SW 846 Method 8260 Constituent	(µg/kg)	SAI-Res (µg/kg)	SAI-Ind (µg/kg)	GWD-Res (µg/kg)	GWD-Ind (µg/kg)
S-9	acetone	230	3.82E+07	4.16E+07	3.65E+05	4.16E+06
	2-butanone	71	7.58 E+06	1.40 E+07	1.83 E+05	5.11 E+05
	4-methyl-2-pentanone	120	1.37 E+07	1.02 E+08	1.83 E+05	5.11 E+05
S-13	acetone	54	3.82E+07	4.16E+07	1.83E+05	5.11 E+05
S-15	toluene	6.8	3.58E+07	3.63E+07	1.00E+05	1.00 E+05
S-17	acetone	38	3.82E+07	4.16E+07	1.00E+05	1.00E+07

£ - Action levels from TNRCC, 1993.

nr - not reported

Table 6. Comparison of soil analytical results with TNRCC Action Levels.

8.0 MAPPING OF DEBRIS PILES AND VOLUME ESTIMATION

8.1 Previously Mapped Spill Sites

Two of the four mapped spills located during the November 1995 PA field activities were not visible during the August 1997 site characterization (Figure 3). Wind blown fine sand and silt has covered these sites. These two sites were eventually located after digging 0.25-0.5 inches below the soil surface. Both sites are located on a dirt road which is topographically 0.5 to 1.0 feet below adjacent debris piles and mounded soil. This situation allows for sand and silt from the adjacent high areas to blow and accumulate into the low dirt road.

8.2 August 1997 Observations

Based upon recollections from the 1995 PA field team and field notes taken during the PA, minor dumping has occurred in the last 21 months. This material consists primarily of landscaping debris such as granite pebbles, limestone cobbles, and yard brush, and remodeling materials such as concrete, wood paneling, and ceramic tile. Only two new spills were discovered, consisting of less than 1 yd³ of contaminated soil. These two sites, P-1 and P-2, are located on the west side of the dirt road between power pole 8 and 9 (Plate 1).

A total of 91 stations were logged and mapped for roofing shingles and floor tiles (Plate 1). Tar paper roofing material typically was found in large, semi-rounded piles. Older piles of roofing material have welded together due to the sun and have taken on a burnt appearance. With the exception of one tar paper roofing pile (G-65) all tar paper roofing material is considered to be free of asbestos based on the analytical results (Table 3). Floor tile piles are generally small in volume, with older tiles having upturned and broken edges. Some floor tiles have become brittle while others remain flexible. Every occurrence of floor tiling was sampled and all floor tiles are considered to contain asbestos based on the analytical results (Table 3).

A total of 70 stations were logged and mapped under the category of non-hazardous construction/demolition debris, landscaping rocks, yard brush, household trash, etc., (collectively termed rubble in this report). Construction/demolition debris and landscaping debris piles are typically large to medium sized. Yard brush and household trash generally form low standing piles with significant dispersion surrounding the original point source. Scattered debris consisting primarily of wind dispersed household trash and yard brush forms a zone that typically extends 50 to 200 ft beyond the point source. On the field map (Plate 1) these zones are identified as "Scattered Debris." The zone of "Scattered Debris" becomes wider near Montana Avenue due to the larger volume of dumped material in this area.

A majority of rubble is concentrated between power pole 1 and 7. Rubble piles are so close together in this area and of similar content that they are often lumped together and mapped and described as a single station. This is especially the case between power poles 1 and 3.

Mapping of rubble piles has in some cases extended more than 200 feet east and west of the power line road. During the initial reconnaissance of the area Golder decided that mapping would extend beyond those boundaries in order to characterize and provide more complete volumetric calculations on rubble piles which exist along side dirt roads. Dirt roads, besides the main north-south power line road, are numerous in the area. Dumpers have taken advantage of this and have driven several hundreds of feet off the power line road to dump their loads.

8.3 Volume Estimation

The volume of waste per station was visually estimated in terms of the number of 55-gallon drums needed to contain the wastes and was recorded on the Station Description Sheets (Appendix D). The volumes of three different waste types are summarized in Table 7. The number of drums were then converted to cubic yards.

Material	55-Gallon Drums	Cubic Yards
Rubble	4400	1200
Stained Soil	10	3
Tar Paper	500	136
Asbestos containing waste	30	9

Table 7. Volume estimates of dumped materials.

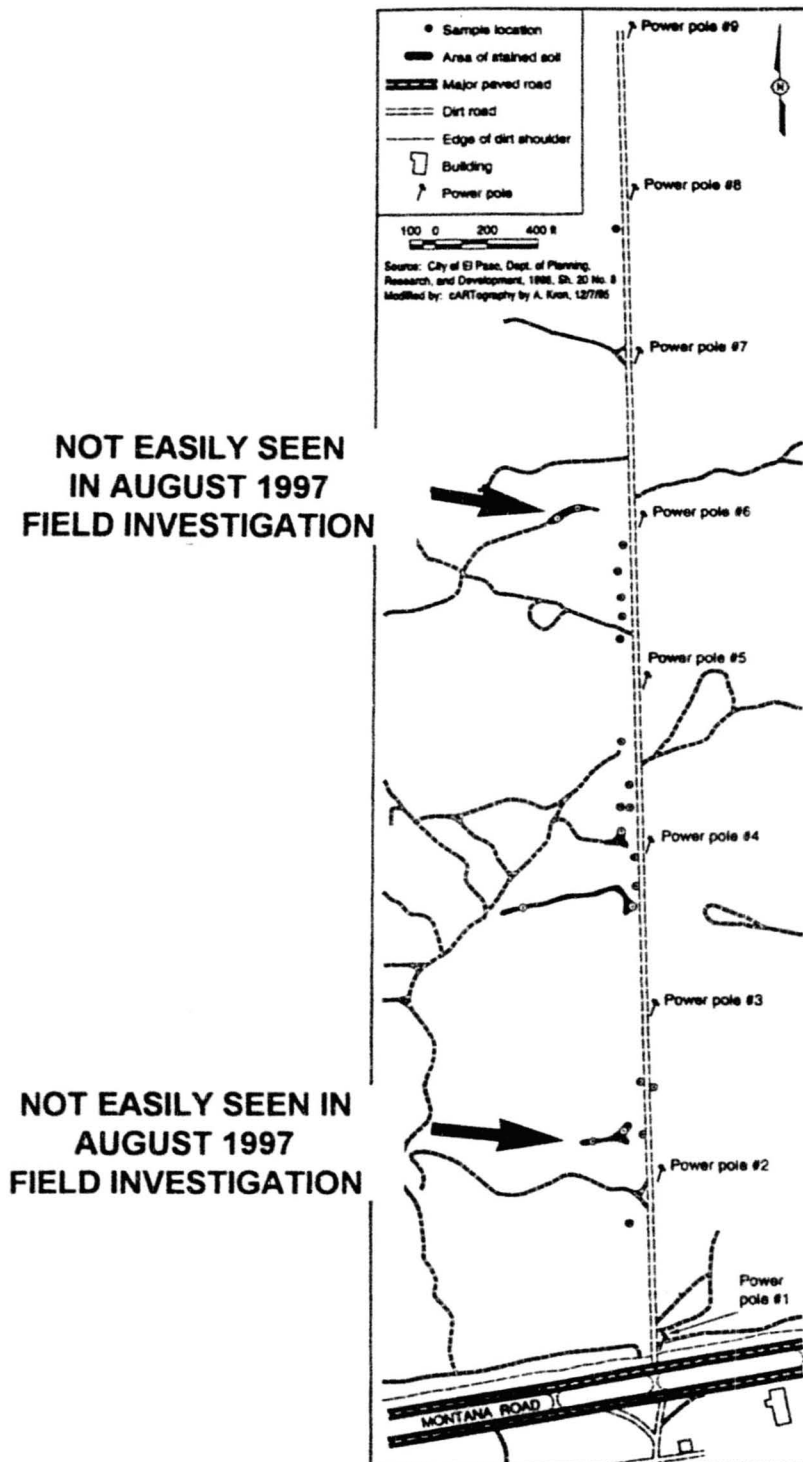


Figure 3. Rubble Dump/Spill Site field investigation area showing the location of PA field sampling points and spills.

9.0 COST ESTIMATE FOR REMOVAL AND DISPOSAL

9.1 Soil

The concentration of volatile compounds detected in this latest round of sampling when compared with TNRCC action levels do not indicate high enough concentrations to warrant remedial action of soil at this site (see Section 7.0). However, the concentrations of semivolatile compounds detected are "falsely" low due to the elevated reporting limits (see Section 7.0) for S-1, S-2, S-4, S-6, S-9, S-11, S-13, and S-15. The latest sampling results indicate that there has been no vertical or lateral migration of VOC or SVOC compounds from the spill sites (see Section 6.2). Based on results from this study and VOC and SVOC results from the PA, it is recommended that the spill site soils be removed by an appropriately licensed disposal contractor (e.g., Safety Kleen, Waste Control Specialists, Inc.). The cost would be approximately \$3,000.

9.2 Asbestos

The total estimated volume of all floor tiles at the Rubble Dump/Spill Site is 9 yd³. It is recommended that all floor tiles, as well as the one occurrence of asbestos in roofing material, be removed and disposed of at a permitted disposal facility. Two local hazardous waste disposal firms were contacted regarding the disposal of asbestos materials. These two firms were Safety Kleen and Waste Control Specialists, Inc. both with El Paso offices. Both firms are listed as licensed and permitted handlers and disposers of hazardous wastes in TNRCC's listing of Commercial Hazardous and Industrial Solid Waste Management Facilities (TNRCC, 1996b). Only Safety Kleen was willing to provide a cost estimate (see Appendix I).

Assuming that there is only 9 yd³ of asbestos floor tiles and it would take no longer than 5 days to remove the tiles, the total cost to collect, transport, and dispose of the asbestos containing material is estimated to be:

Asbestos removal	\$1,224
Waste Approval Fees	125
Drop Fee	900
Line Haul to Houston, TX	2,800
Box Rental for 5 days	70
Box Liner	35
Total	\$5,154

9.3 Other Rubble

The city of El Paso was contacted regarding the disposal of all non-hazardous construction/demolition material. Ms. Melinda Cabra of the Solid Waste Group advises, as she says she has on a number of previous occasions, that large quantities of trash generated on Fort Bliss property be disposed of at the Fort Bliss landfill due to the shrinking capacity at the city's McComb commercial landfill. It is recommended that DOE negotiate directly with the Fort Bliss landfill for the disposal of all the illegally dumped non-hazardous and non-regulated waste (excluding soil and asbestos tiles) currently present at the Rubble Dump/Spill Site. Although the cost for actual disposal is not known, estimates for the removal and transportation of waste to the Fort Bliss landfill was sought from several local firms. The rates for the heavy equipment and operators needed to complete the job are listed below.

Front-end Loader	\$60-80/hr
Bulldozer	60-80/hr
Dump Truck	70-100/hr

It is estimated to take 2-4 weeks to complete the removal, transportation, and disposal of the rubble and roofing material wastes. It is assumed that these wastes will be disposed of at the Fort Bliss landfill. The above rates do not include transportation mileage or field supervision which may be required by the contractor to complete the job. The basic cost of waste removal, assuming a 2-4 week completion period and a crew of one front-end loader, one bulldozer, and 2 dump trucks is:

	2 weeks	4 weeks
1 Front-end Loader	\$4,800	\$12,800
1 Bulldozer	4,800	12,800
2 Dump Trucks	11,200	32,000
Total	\$20,800	\$57,600

10.0 ENGINEERING CONTROLS TO LIMIT ASSESS

Several engineering control methods are presented in this section which could be implemented to prevent illegal dumping at this site. Only methods which require no full-time security personnel (i.e., security guard, surveillance camera) and are low maintenance were considered most applicable for this site.

First and foremost, "NO DUMPING" signs should be placed along the current fence line approximately every 100 ft. In order for the engineering controls to be effective, they will need to be placed from the corner of the airport fence, then east along Montana Avenue to the corner of Montana Avenue and the access road to OSTA, and then north to the personnel gate at OSTA. This area is outlined in red on Figure 4 and identified as the "Proposed fence line." This would control access all along Montana Avenue and west of OSTA. The current method of access control at this site, as well as several more effective methods, are described in the following sections.

10.1 Current Method of Access Control

Fort Bliss currently discourages access to the site area by dirt barricades which are present from the corner of the El Paso International Airport fence line (Figure 4), east to the OSTA access road, and several hundreds of yards north from the corner of the OSTA access road and Montana Avenue. The dirt barricade does not continue the full length along the OSTA access road. Dirt barricades are typically 2 to 5 feet tall and 5 to 10 feet wide. It is not known when these were placed along the road. Five low-hill access points are located just off the north shoulder of Montana Avenue (see Figure 4). These access points are the main routes of entry for illegal dumpers onto Fort Bliss property from Montana Avenue. A one lane dirt frontage road exists behind the dirt barricade and runs parallel to Montana Avenue (see Plate 1). This frontage road gives access to the north-south power line road. Only one gate currently exists in the study area and it is located at the intersection of power line road and Montana Avenue. This is a locked steel gate approximately 10 feet wide and 4 feet tall. It is hinged to allow vehicles into the area.

10.2 Dirt Barricades

One option to controlling access is to continue, but expand, the use of dirt barricades. This would essentially be a low-cost option involving the improvement of old barricades and construction of new ones. If dirt barricades are selected as the engineering control method it is recommended that:

- Barricades be extended from the corner of the El Paso International Airport fence line to the corner of the Montana Avenue and OSTA access road, then north to the OSTA employee parking lot;
- The 5 access points along Montana Avenue be filled in;

- Barricades maintain a 4 foot minimum height to discourage low-clearance cars and light-duty trucks from driving over the barricades;
- A zigzag pedestrian gate be installed so that walkers and recreational bicyclists can continue to use the area;
- Five to 10 individual barricades be constructed to stretch across the frontage road to further discourage access; and
- Visual inspections be performed on the site twice a year for the first several years to evaluate effectiveness.

This engineering control method is not considered to be a long term solution. Heavy duty trucks and other high-clearance motor vehicles may still be able to access the area. Inevitably, the dirt barricades will have to have future maintenance.

10.3 Concrete Barricades

Another option to controlling access to the area is to assemble a series of concrete construction barricades similar to the types used to separate highway traffic. The cost of this option would be considerably more than the dirt barricades, however, the maintenance is not expected to be as great. A concrete barrier surrounding the Ft. Bliss property may be aesthetically undesirable and may generate a negative public image. If concrete barricades are selected as the engineering control method it is recommended that:

- The barricades be placed in front of the existing dirt barricades;
- Barricades be extended from the corner of the El Paso International Airport fence line to the corner of the Montana Avenue and OSTA access road, then north to the OSTA employee parking lot;
- A zigzag pedestrian gate be installed so that walkers and recreational bicyclists can continue to use the area;
- Five to 10 individual barricades be constructed to stretch across the frontage road to further discourage access; and
- Visual inspections be performed on the site once a year for the first several years to evaluate effectiveness.

10.4 Barbed Wire Fence

Another option to control access to the area is to install a barbed wire fence. This fence would be similar to cattle fences which are typically 4 feet in height with three or four strands of barbed wire running between metal posts set at 6-10 foot intervals. The cost of this access control method may be comparable to the dirt barricades. The aesthetics of this option may be more acceptable than the concrete barricade option. If barbed wire is selected as the engineering control method it is recommended that:

- The fence be placed in front of the existing dirt barricades;

- The fence be constructed from the corner of the El Paso International Airport fence line to the corner of the Montana Avenue and OSTA access road, then north to the OSTA employee parking lot;
- A zigzag pedestrian gate be installed so that walkers and recreational bicyclists can continue to use the area;
- Five to 10 individual barricades be constructed to stretch across the frontage road to further discourage access; and
- Visual inspections be performed on the site once a year for the first several years to evaluate effectiveness.

10.5 Chain Link Fence

Another option to consider is the installation of a chain link fence. This fence would be 6 to 8 feet high and similar to the fence currently in place at the adjacent El Paso International Airport property. The cost of the chain link fence would likely be more than the barbed wire fence option but maintenance is likely to be lower. A possible disadvantage of this option is that medium-sized desert game may not be able to roam the site, a factor not likely to be a problem with a barbed wire fence. If chain link fence is selected as the engineering control method it is recommended that:

- The fence be placed in front of the existing dirt barricades;
- The fence be constructed from the corner of the El Paso International Airport fence line to the corner of the Montana Avenue and OSTA access road, then north to the OSTA employee parking lot;
- A zigzag pedestrian gate be installed so that walkers and recreational bicyclists can continue to use the area;
- Five to 10 individual barricades be constructed to stretch across the frontage road to further discourage access; and
- Visual inspections be performed on the site once a year for the first several years to evaluate effectiveness.

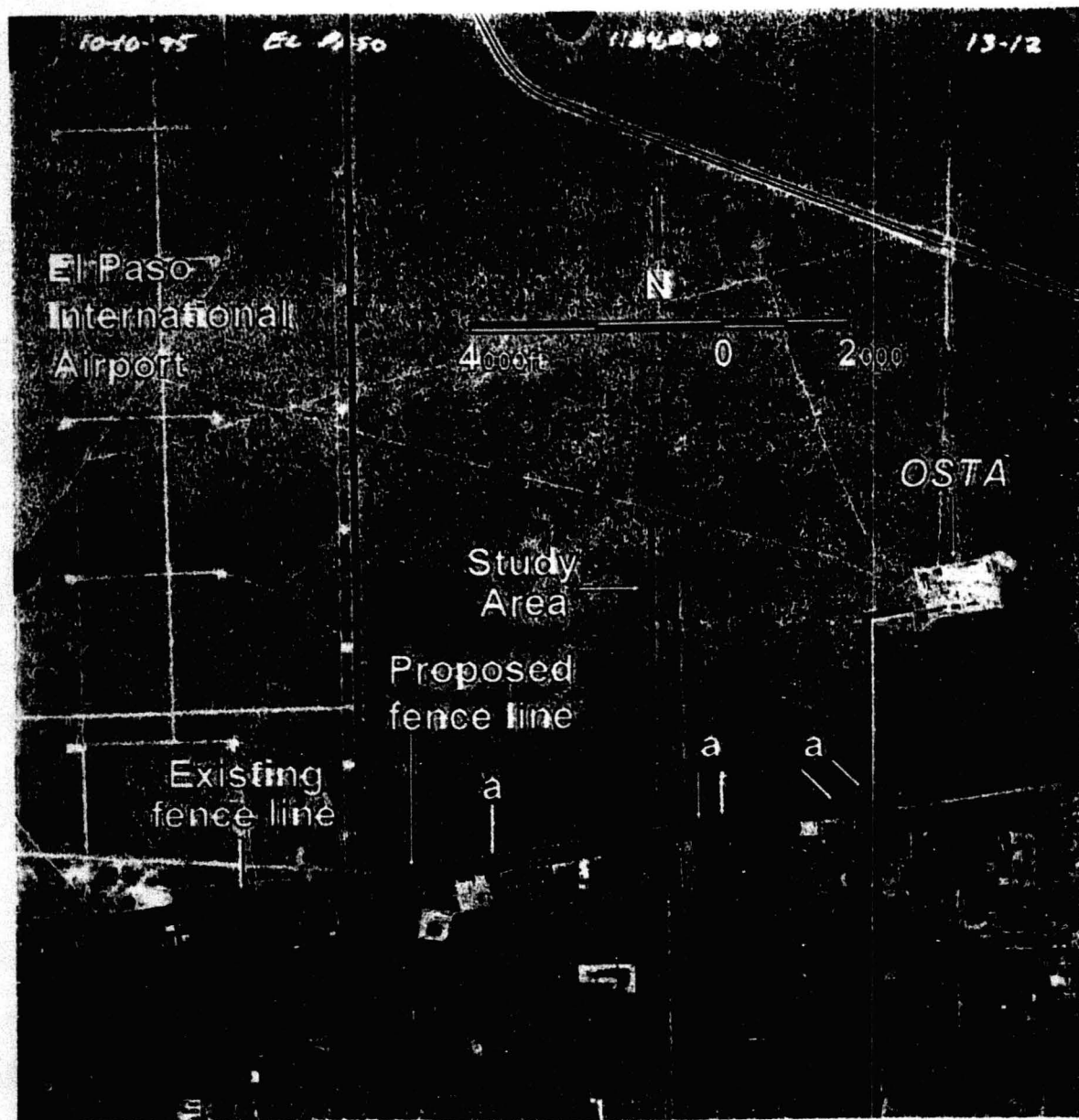


Figure 4. Aerial photograph of the study area and adjoining El Paso International Airport property (Cooper Aerial Survey, 1995). Fence line for airport is outlined in blue. Proposed fence line for the Rubble Dump/Spill Site is outlined in red (a - indicates site access points).

11.0 SUMMARY AND RECOMMENDATIONS

Site characterization activities were successfully completed at the Rubble Dump/Spill Site in August 1997 in accordance with the approved Work Plan and Health and Safety Plan. Of the 50 suspected asbestos containing material samples collected, 26 contained visible quantities of asbestos; 25 of these samples were floor tiles and one was tar paper roofing material. Small quantities of VOCs (acetone, 2-butanone, 4-methyl-2-pentanone, and toluene) were detected in 4 of the 18 soil samples collected. Concentrations for all VOC analytes are 4 to 6 orders of magnitude lower than TNRCC's Medium Specific Concentrations for residential and industrial land use. No SVOCs were detected in these soil samples, however, detection limits were artificially high due to elevated reporting limits.

There is an estimated 9 yd³ of asbestos containing material and 1200 yd³ of various rubble types including landscaping rock, concrete, yard brush, tires, glass, empty paint cans, and household trash at the site. There is also an estimated 136 yd³ of tar paper roofing material at the site. The analytical results from soil samples collected in this study indicate that SVOCs may be present at concentrations worthy of remediation. The latest sampling results indicate that there has been no vertical or lateral migration of VOC or SVOC compounds from the spill sites.

The cost of removal and disposal of the asbestos containing material to a permitted facility is estimated to be \$5,154. The cost for removal and proper disposal of stained soil is estimated to be \$3,000. The range of cost for the removal of the other wastes to the Fort Bliss landfill is estimated to be \$20,800 to \$56,700.

Four potential engineering control methods were evaluated to prevent future illegal dumping at the site. These included dirt barricades, concrete barricades, barbed wire fencing, and chain link fencing.

Based upon the site characterization activities conducted at the Rubble Dump/Spill Site, the following actions are recommended to remediate and protect the site:

1. Remove and dispose of all asbestos containing material (the bulk of which is floor tiles) at a permitted disposal facility;
2. Remove and dispose of all non-hazardous construction/demolition material, tar paper roofing material, yard brush, household trash, etc., at the Fort Bliss landfill;
3. Remove and dispose of all stained soil to a properly licensed treatment/disposal facility; and
4. Construct a barbed wire fence with "NO DUMPING" signs along Montana Avenue and adjacent to the OSTA access road to prevent future illegal dumping at the site.

12.0 REFERENCES

Cooper Aerial Survey, 1986. Aerial photograph, scale 1:12,000.

Cooper Aerial Survey, 1995. Aerial photograph, scale 1:24,000.

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EPA, 1993. USEPA Contract Laboratory Program, National Functional Guidelines for Organic Data Review, EPA-540/R-94-012, February 1993.

EPA, 1995. Risk-Based Concentration Table. Memo from Roy L. Smith, Office of RCRA, Technical and Program Support Branch (3HW70).

Golder Associates Inc., 1995. Golder Associates Inc. Technical Procedure TP-2.2-12 "Analytical Data Management."

Golder Associates Inc., August 1997a. Work Plan for the Site Characterization of the Rubble Dump/Spill Site, Fort Bliss, Texas.

Golder Associates Inc., August 1997b. Health and Safety Plan for the Site Characterization of the Rubble Dump/Spill Site, Fort Bliss, Texas.

Golder Federal Services, Inc., July 1997. Final Report - Preliminary Site Investigations; Former Dry Cleaners (Building 2019), Solvent Spill (Building 1116), Rubble Dump Site, and McGregor Borrow Pit.

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TNRCC, 1995 (revised). Guidelines for the Classification and Coding of Industrial Waste and Hazardous Waste, RG-22.

TNRCC, 1996a. Asbestos Waste Disposal, TNRCC Regulatory Guidance RG-4.

TNRCC, 1996b. Commercial Hazardous and Industrial Solid Waste Management Facilities, GI-225.

APPENDIX C

ENVIRONMENTAL TECHNICAL REPORT – ENCON International Inc.



INTERNATIONAL, INC.

Engineering, Environmental & Technical Services

ENVIRONMENTAL TECHNICAL REPORT

Fort Bliss Rubble Dump and Spill Site Clean Up

Near Site Monitor - SMWU 18

Contract # DABT 51-99-P-0893

Prepared For:

Mr. David Dodge

DERA Program Manager

HQ USAADACENFB

ATTN: ATZC-DOE B622 Dodge

Fort Bliss, TX 79916-6816

Prepared By:

ENCON International, Inc.

7307 Remcon Circle, Suite 101

El Paso, Texas 79912

June 14, 2000

ENCON Project #144-9

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	3. Construction Debris	5
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ATTACHMENTS:

- A. Project Task Completion Schedule
- B. Aerial Photograph of the Project Site
- C. Laboratory Results
- D. Non-hazardous Manifest-Soil
- E. Non-hazardous Manifest-Asbestos
- F. Photographic Documentation

June 14, 2000

Mr. David Dodge
DERA Program Manager
HQ USAADACENFB
ATTN: ATZC-DOE B622 Dodge
Fort Bliss, El Paso, TX 79916-6816

Phone: 568-7979
Fax: 568-1313

RE: ENVIRONMENTAL TECHNICAL REPORT
Fort Bliss Rubble Dump and Spill Site Clean Up
(Near Site Monitor - SWMU 18)
Contract # DABT 51-99-P-0893
ENCON Project #144-9

A. PURPOSE

ENCON was retained by the Fort Bliss Directorate of Environment to provide environmental restoration services. The intent of this project was to perform clean-up and restoration actions to address illegal dumping at the above-referenced Fort Bliss property. The purpose of this Environmental Technical Report is to briefly summarize the status of restoration actions completed, and to detail the status of reported hydrocarbon-contaminated soil, asbestos, and construction debris previously located at the subject site.

B. INITIAL ACTIONS COMPLETED

1. **Document Review.** Existing Fort Bliss historical records and the 1999 Golder Associates "Site Characterization Report" were reviewed to determine the areas of primary environmental concern at the subject site.
2. **Field Inspection.** The approximately 1 mile by 1.7 mile subject site is located north of Montana Avenue near Site Monitor (SWMU 18) within Fort Bliss, Texas. The purpose of the site reconnaissance was to observe the existing general

environmental property conditions, and to verify the extent of soil contamination, asbestos-containing materials (ACM's), and construction debris. Field inspection and document review facilitated follow-up planning activities for corrective actions. No drums or containers of paints, solvents, oil or other chemicals were observed on-site. Also, no batteries, which may contain hazardous metals i.e., cadmium or lead, were observed at the subject site.

3. **Project Planning and Management.** ENCON personnel met with Mr. David Dodge (Fort Bliss DERA Program Manager) on October 23, 1999, to update and revise the original Scope of Work and to establish a tentative schedule for initiating project tasks. A project task completion schedule was developed and submitted for review by Mr. Dodge. The project task completion schedule chart is included as Attachment A.
4. **Surveying and Staking.** A Texas-Licensed land surveying firm was retained to mark and stake the location of the east-west property line along Montana Avenue for a distance of 5800 feet in order to determine the location for the subsequent fence installation along the existing earthen berm.
5. **Earthen Berm Repair.** The existing earthen berm was repaired for the entire project area length of about 1.7 miles along Montana Avenue. ENCON personnel repaired the berm using a backhoe, a medium-size bobcat, as well as shovels and hand tools. Since this berm structure serves as an important physical barrier and deterrent to future unauthorized dumping, Mr. Dodge requested that the berm be adequately repaired. ENCON identified 11 commonly-used access points during the initial site inspection activities, which were subsequently closed during the earthen berm repair activities. Several other berm repairs were necessitated by the deteriorated berm condition. The entire berm structure was repaired in about six working days.

6. **Initial Perimeter Clean Up.** ENCON field personnel manually picked up glass, cardboard, paper, and miscellaneous rubbish and debris from both inside and outside the berm along the entire 1.7-mile Montana border. The debris was bagged in 44-gallon industrial-type bags for disposal at the Clint Landfill. Periodically, Texas Department of Transportation assigned personnel removed some bagged debris as part of ongoing upkeep along Montana.
7. **Fence Installation.** The original proposal detailed a 4000-foot long, 4-strand barbwire fence placed within the graded roadway inside the berm. However, the linear footage was increased to provide for a 5800-foot fence installed on the berm, itself, to better serve as a more formidable barrier to further dumping. That change resulted in 1800 additional feet of berm repair, pruning the desert shrubs growing on the berms, a 16-foot spacing of fence posts rather than the original 20-foot spacing, and using cross-beamed galvanized break posts approximately every 300 feet. The closer spacing and the galvanized break posts provided extra strength for the fence which was constructed on the unconsolidated soil of the berm rather than in the packed soil of the graded pathway.

ENCON retained a fencing contractor to install the 4-strand barbwire fence for a distance of 5800 feet. The actual fence installation was completed in five work days. The fence was located within Fort Bliss property, typically varying from 2-10 feet north of and within the property line. Attachment B shows the newly installed fence at the subject site.

8. **Field Monitoring and Sampling.** Soils near the vicinity of the four reportedly contaminated areas (labeled P1, P2, P3, and P4 in the 1999 Golder Associates Survey Map) were monitored for any existing hydrocarbon vapors using a photo-ionization detector (PID). The field PID did not record any detectable volatile hydrocarbon vapors from the contaminated soils (see Table 1 below) and so, did not detect any remaining volatile organic compounds (VOC's) in the four previously contaminated areas. The field PID results suggested either a heavier non-volatile organic compound (e.g. waste oil) had been present, or if a volatile organic compound had been released, the VOC's had already volatilized from the previously contaminated areas.

One composite soil grab sample was collected to provide a valid, representative sample from the four reportedly contaminated source areas. The sample was sealed in a 180 milli-liter VOA vial with no headspace, immediately chilled to approximately 4° C (Centigrade), and delivered the same day for laboratory analysis.

Table 1. Field Findings

Map Location	Field Observations	PID Measurements
P1	Brownish silty sand with mild hydrocarbon odors	ND
P2	Black sandy soil with strong hydrocarbon odors	ND
P3	Brownish silty sand with no odors	ND
P4	Black sand and silty sand with mild hydrocarbon odors	ND

Notes: 1. Map locations based on Golder Assoc. Survey
2. ND = no significant VOC's detected (< 1 ppm)

9. **Laboratory Results.** The composite sample (FB-1) collected from the four reportedly contaminated areas was analyzed for TPH (total petroleum hydrocarbons) and for BTEX (benzene, toluene, ethyl benzene, and total xylenes) using EPA Methods 8021 and 1005, respectively. The composite soil sample indicated TPH concentrations below 50 ppm, far below the Texas Natural Resources Conservation Commission (TNRCC) action level of 500 ppm for similar fine-grained soils. The laboratory analytical results for the composite soil sample also indicated benzene concentrations below the detection limit of 50 ppb, suggesting lighter gasoline-type substances were not the likely source of soil contamination at this subject site. Complete laboratory results of the analyzed soil sample are included in Attachment C of this report.

C. CLEAN-UP ACTIONS COMPLETED

1. **Hydrocarbon-Contaminated Soil.** Approximately six cubic yards of soil from the four previously-described contaminated areas (P1, P2, P3, and P4) were excavated for proper sampling, laboratory analyses, clean-up and disposal activities. The excavated contaminated soils were stored in six 55-gallon drums on site pending laboratory analyses and waste characterization. Clean soil from the vicinity was used as backfill material. The clean, uncontaminated soil was placed evenly to minimize differential settling of sand grains at the four remediated locations. Because of the low TPH concentrations, the soil was characterized as "non-hazardous, regulated wastes (Class 1)." The drums of soil were later transported (January 11, 2000) to the permitted Camino Real Landfill in New Mexico. A non-hazardous disposal manifest is included in Attachment D.
2. **Asbestos-Containing Materials (ACM).** Texas Department of Health-licensed asbestos professionals from ENCON identified the location of the asbestos containing materials (ACM's). A Licensed Asbestos Contractor was retained to properly remove, transport, and dispose of the ACM's at the subject site. A total of seven ACM sites (O-3, O-5, O-17, O-32, O-40, O-54, and O-85) were previously identified in Table 3 of the Golder Associates, 1999 Report. The ACM's containing 5 - 15% chrysotile asbestos were identified along the north-south earthen pathway. These ACM's were properly bagged in six-millimeter polyvinyl bags, labeled, and transported to the EPA-approved Otero County Landfill in New Mexico. Approximately four yards of ACM's were removed and disposed of from the subject site. No further ACM-related environmental actions appear warranted at this time. A non-hazardous manifest is included in Attachment E.
3. **Construction Debris.** ENCON field personnel performed the removal and disposal of non-hazardous construction/demolition debris over a period of approximately four weeks using a front-end loader and five dump trucks. A total of 1638 cubic yards of non-hazardous construction/demolition debris was removed, transported, and disposed of at the Camino Real Landfill in New Mexico, and the Clint and Fort Bliss Landfills in Texas.

4. Photo Documentation. Photographic documentation of the subject site before, during, and after clean-up activities is included in Attachment F.

D. CONCLUSIONS

1. Approximately 1638 cubic yards of non-hazardous construction-type debris were disposed of at the Camino Real Landfill in New Mexico, and Clint and Fort Bliss Landfills in Texas.
2. Six yards of hydrocarbon-contaminated soils were properly disposed at the Camino Real Landfill in New Mexico as non-hazardous regulated waste (Class 1).
3. Four yards of ACM's were properly disposed at the NMED-approved Otero County New Mexico Landfill.
4. The repair of the entire earthen berm and the installation of 5,800 linear feet of 4-strand barbwire fence along Montana Avenue should greatly reduce illegal dumping at the subject site, and reduce potential financial liability to Fort Bliss.
5. No other hazardous waste was identified or disposed during ENCON's remedial activities within the Golder Study area at the subject site.
6. No further environmentally related corrective actions concerning asbestos or hydrocarbon contaminated soil within the Golder Report's study area appear warranted at the subject site.

E. RECOMMENDATIONS

1. Additional funding should be secured to facilitate final TNRCC Project Closure actions.
2. The Fort Bliss Directorate of Environment should maintain a copy of this Report for a period of at least five years.
3. Provide a courtesy copy of this Report to the TNRCC-El Paso Office, attention Mr. Terry McMillan.

Prepared By:

Ravi Kommasyula
Ravi Kommasyula
Env. Professional
TDH Asbestos #60-1898

Reviewed By:

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for John Knopp
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Reviewed By:

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for Alex Woelper, P.E.
Vice-President
TDH Asbestos #10-5441

Approved by:

James Bubb
Jim Bubb, Ph.D., P.E.
President

ATTACHMENTS:

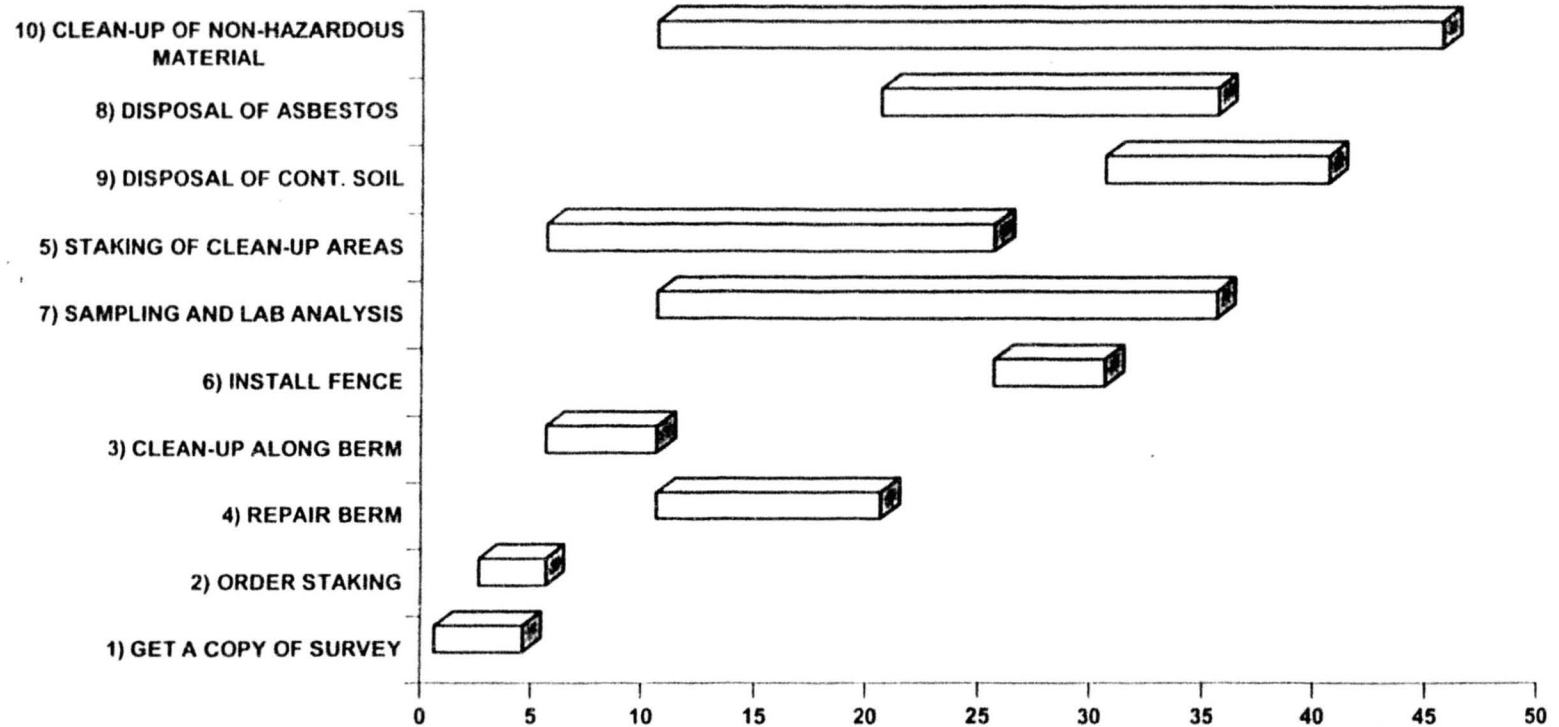
- A. Project Task Completion Schedule
- B. Aerial Photograph of the Project Site
- C. Laboratory Results
- D. Non-hazardous Manifest - Soil
- E. Non-hazardous Manifest - Asbestos
- F. Photographic Documentation

ATTACHMENT A

- *Project Task Completion Schedule*

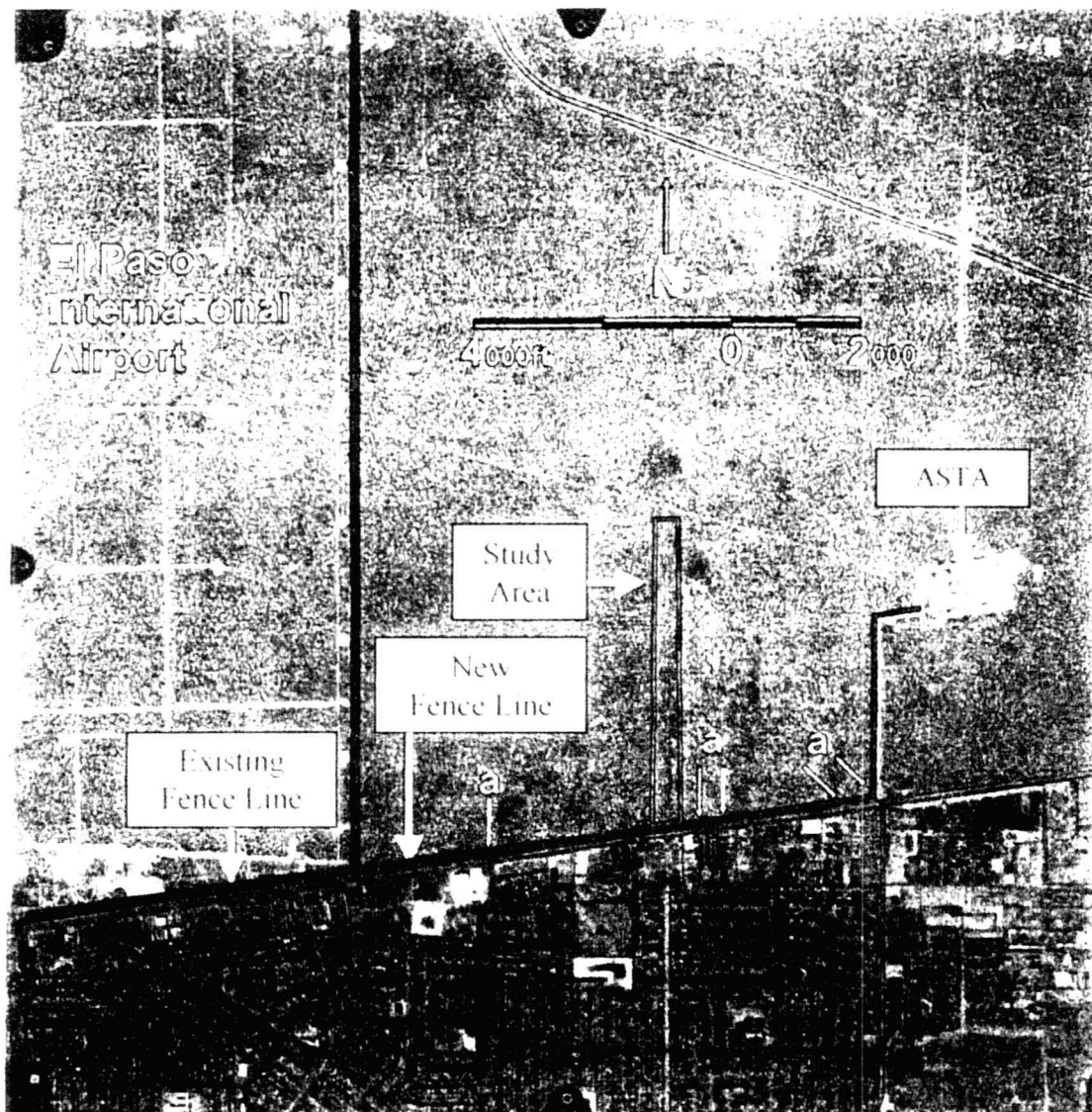
FORT BLISS RUBBLE DUMP/SPILL SITE
(Start Nov. 30, 1999)

PROJECT TASKS



ATTACHMENT B

- *Aerial Photograph of the Project Site*



Attachment B Aerial photograph of the project site and adjoining El Paso International Airport property (Cooper Aerial Survey, 1995). Fence line for airport is illustrated in blue. The newly installed fence line for the Rubble Dump/Spill site is outlined in green (a-indicates typical site access points that were blocked by repairing the earthen berm). Recommended additional fence line is illustrated in red.

ATTACHMENT C

- *Laboratory Results*



TRACE ANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9
4725 Ripley Avenue, Suite A

Lubbock, Texas 79424
El Paso, Texas 79922

800•378•1296
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E-Mail: lab@traceanalysis.com

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915•585•3443

FAX 806•794•1298
FAX 915•585•4944

REPORT SUMMARY

December 31, 1999

CLIENT: ENCON INTERNATIONAL
7307 REMCON CIR STE 101
EL PASO TX 79912

SAMPLE DATE: 12-29-99

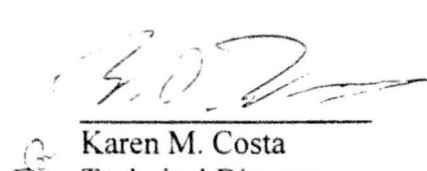
PROJECT ID: Ft Bliss Disposal

ANALYSIS REQUESTED: TPH TX1005 and BTEX

TEMPERATURE UPON RECEIPT: -1° Celsius
Temperature acceptance range for most analysis is 2 – 6 degrees Celsius.

There were no unusual occurrences with these analyses.

Laboratory analyses were performed on samples utilizing procedures published in Standards Methods for the Examination of Water and Wastewater, 18th Edition 1992; EPA Test Methods for Evaluating Solid Waste 3rd Edition, through December 1996 revisions; or EPA Methods for the Chemical Analysis of Water and Wastes [EPA-600/4-79-020], March 1983, and the latest promulgated updates. This is an integral part of the report and must be included with all copies.



Karen M. Costa
Technical Director

ANALYTICAL REPORT

TRACE ANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9

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7307 REMCON CIR #101

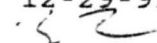
E-Mail: lab@traceanalysis.com

EL PASO TX 79912

SAMPLE NO.: 995574

INVOICE NO.: 22104992

REPORT DATE: 12-29-99

REVIEWED BY: 

PAGE : 1 OF 2

CLIENT SAMPLE ID : Ft Bliss #1
SAMPLE TYPE: soil
SAMPLED BY: R.K.
SUBMITTED BY: R.K.
SAMPLE SOURCE: Montana Ave
ANALYST: F.Martinez

AUTHORIZED BY : R.K.
CLIENT P.O. : --
SAMPLE DATE ...: 12-20-99
SUBMITTAL DATE : 12-20-99
EXTRACTION DATE: 12-20-99
ANALYSIS DATE ..: 12-22-99

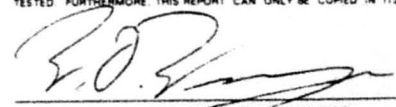
Petroleum Contaminants by 8021B

D A T A T A B L E

Parameter	Result	Unit	Detection Limit
Benzene	<50.	ug/Kg	50.
Toluene	<50.	ug/Kg	50.
Ethylbenzene	<50.	ug/Kg	50.
Total Xylenes	<50.	ug/Kg	50.

(1) Copy to Client

ANALYTICAL RESULT(S) REPORTED HEREIN APPLY ONLY TO THE SAMPLE(S)
TESTED. FURTHERMORE, THIS REPORT CAN ONLY BE COPIED IN ITS ENTIRETY.



MANAGING DIRECTOR

ANALYTICAL REPORT

TRACE ANALYSIS, INC.

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CLIENT ENCON INTERNATIONAL El Paso, Texas 79922 888•588•3443

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7307 REMCON CIR #101

E-Mail lab@traceanalysis.com

EL PASO TX 79912

SAMPLE NO.: 995574

INVOICE NO.: 22104992

REPORT DATE: 12-29-99

REVIEWED BY: ZZ

PAGE : 2 OF 2

D A T A T A B L E

(Cont.)

Surrogate Information -

		<u>Percent</u>	<u>Range</u>
		<u>Recovery</u>	
aaa-Trifluorotoluene:	87.9	67-122
4-Bromofluorobenzene:	91.5	64-113

ANALYTICAL REPORT

TRACE ANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296
CLIENT ENCON INTERNATIONAL El Paso, Texas 79922 888•588•3443
7307 REMCON CIR #101 E-Mail lab@traceanalysis.com
EL PASO TX 79912

806•794•1296 FAX 806•794•1298
915•585•3443
SAMPLE NO.: 995574
INVOICE NO.: 22104992
REPORT DATE: 12-29-99
REVIEWED BY: *[Signature]*
PAGE : 1 OF 1

CLIENT SAMPLE ID : Ft Bliss #1
SAMPLE TYPE: soil
SAMPLED BY: R.K.
SUBMITTED BY: R.K.
SAMPLE SOURCE ...: Montana Ave

AUTHORIZED BY : R.K.
CLIENT P.O. : --
SAMPLE DATE ...: 12-20-99
SUBMITTAL DATE : 12-20-99
EXTRACTION DATE: 12-20-99

TPH TX1005

DATA TABLE

Parameter	Result	Unit	Detection Limit	Analysis Date
C6-C10	<50.	mg/Kg	50.	12-24-99
>C10-C28	<50.	mg/Kg	50.	12-24-99
C6-C28	<50.	mg/Kg	50.	12-24-99

(1) Copy to Client

ANALYTICAL RESULT(S) REPORTED HEREIN APPLY ONLY TO THE SAMPLE(S)
TESTED. FURTHERMORE, THIS REPORT CAN ONLY BE COPIED IN ITS ENTIRETY

[Signature]
MANAGING DIRECTOR

4725 Ripley Dr., Ste A
El Paso, Texas 79922-1028
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # _____

ANALYSIS REQUEST

(Circle or Specify Method No.)

Company Name: ENCON INC, INC. Phone #: 333-3740

Address: (Street, City, Zip) 7307 Remick Circle #101, TX 79912 Fax #: 581-2049

Contact Person: RAVI KUMAR S YULA

Invoice to:
(If different from above)

Project #: 144-cj Project Name: 1st B/L's Disposal

Project Location: Flourish Avenue Sampler Signature: [Signature]

[illegible]

Relinquished by:	Date:	Time:	Received by:	Date:	Time:
------------------	-------	-------	--------------	-------	-------

Kerrick - page 12/2/77

Relinquished by: <i>[Signature]</i>	Date: <i>11/1/01</i>	Time: <i>11:00</i>	Received by: <i>[Signature]</i>	Date: <i>11/1/01</i>	Time: <i>11:00</i>
-------------------------------------	----------------------	--------------------	---------------------------------	----------------------	--------------------

Relinquished by:	Date:	Time:	Received at Laboratory by:	Date:	Time:
------------------	-------	-------	----------------------------	-------	-------

Amend ~~to~~ 12/10/89 14.2C

LAB USE ONLY

Intact Y / N 1

Headspace YINTemp -1°C Log-in Review WW

REMARKS:

Carrier # 14000

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C.O.C.

ATTACHMENT D

- *Non-hazardous Manifest - Soil*

CAMINO REAL ENVIRONMENTAL CENTERS, INC.**SOILS PROFILE****1. GENERATOR**

CHECK HERE FOR BILLING _____

Name of Company Ft. BlissAddress Near Site Monitor - SWMU 18 - FTBL - 28, Fort Bliss, TXTelephone # 568-7979**2. CONTACT PERSON**CHECK HERE FOR BILLING ☒Name RAVI KOMMAJOSYULACompany ENCON International, Inc.Address 7307 Remcon Circle #101, TX 79912Telephone # 833-3740 Fax # 581-2049**3. TYPE AND SOURCE OF CONTAMINATION / PHYSICAL SITE LOCATION**Gasoline Contaminated Soil - illegal dumping
Ft. Bliss - 28, Fort Bliss, TX**4. ESTIMATED VOLUME OF SOIL** 1-3 cubic yards**5. SUPPORTING ANALYTICAL DOCUMENTATION (please attach)**Required:

(Additional: TCLP, reactivity, pH, ignitability, PCBs)

6. CERTIFICATION

I HEREBY CERTIFY THAT THIS IS AN ACCURATE DESCRIPTION OF THE SOIL BEING PROFILED AND THAT THE SOIL IS NOT CONTAMINATED WITH OTHER MATERIALS THAT WOULD PROHIBIT LANDFARM REMEDIATION AND ULTIMATE NON-RCRA DISPOSAL.

Name RAVI KOMMAJOSYULA
(please print)Position Staff GeologistSignature Ravi KommajosyulaDate 1/11/00

CAMINO REAL LANDFILL

P.O. Box 580

Sunland Park, N.M. 88063

(505) 589-9440

No. 17677

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

NON HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No		MANIFEST DOCUMENT NO		2. Page 1 of		Information in the shaded areas is not required by Federal law.		
3. Generator's Name and Mailing Address <i>Ft Bliss</i>						A. State Manifest Document Number				
						B. State Generator's ID				
4. Generator's Phone (35) 5-8-7979						C. State Transporter's ID				
5. Transporter 1 Company Name <i>Enron Int'l, Inc.</i>			6. US EPA ID Number			D. Transporter's Phone				
7. Transporter 2 Company Name			8. US EPA ID Number			E. State Transporter's ID				
						F. Transporter's Phone				
9. Designated Facility Name and Site Address <i>Camino Real Landfill</i>						G. State Facility's ID				
						H. Facility's Phone				
11A. HM	11. US DOT Description (including Proper Shipping Name, Non Hazard Class, and ID Number)					12. Containers No. Type		13. Total Quantity	14. Unit Wt/Vol.	I. Waste No.
	a. <i>Contaminated hydrocarbon</i>					3		3 yds		
	b.									
	c.									
	d.									
J. Additional Descriptions for Materials Listed Above						K. Handling codes for Wastes Listed Above				
15. Special Handling Instructions and Additional Information										
<p>16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations, including applicable state regulations.</p> <p>If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.</p>										
Printed/Typed Name <i>RAVI K. MAJUMDAR</i>						Signature <i>Ravi Majumdar</i>			Month Day Year <i>01/1/00</i>	
17. Transporter 1 Acknowledgement of Receipt of Materials										
Printed/Typed Name						Signature			Month Day Year	
18. Transporter 2 Acknowledgement of Receipt of Materials										
Printed/Typed Name						Signature			Month Day Year	
19. Discrepancy Indication Space										
20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.										
Printed/Typed Name <i>JUAN CARDONA</i>						Signature <i>Juan Cardona</i>			Month Day Year <i>10/1/00</i>	

CAMINO REAL LANDFILL

P.O. Box 580

Sunland Park, N.M. 88063

(505) 589-9440

22801

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

NON HAZARDOUS
WASTE MANIFEST

1. Generator's US EPA ID No.

MANIFEST
DOCUMENT NO.2. Page 1
ofInformation in the shaded areas
is not required by Federal law.

3. Generator's Name and Mailing Address

A. State Manifest Document Number

4. Generator's Phone (955) 588-7979

B. State Generator's ID

5. Transporter 1 Company Name

6. US EPA ID Number

C. State Transporter's ID

7. Transporter 2 Company Name

8. US EPA ID Number

D. Transporter's Phone

E. State Transporter's ID

9. Designated Facility Name and Site Address

10. US EPA ID Number

F. Transporter's Phone

G. State Facility's ID

H. Facility's Phone

11A.
HM11. US DOT Description (including Proper Shipping Name, Non Hazard
Class, and ID Number)12. Containers
No. Type13.
Total
Quantity14.
Unit
Wt/Vol.1.
Waste No.

a.

3

3 yds

b.

c.

d.

J. Additional Descriptions for Materials Listed Above

K. Handling codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations, including applicable state regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name

Signature

Month Day Year

17. Transporter 1 Acknowledgement of Receipt of Materials

Date

Printed/Typed Name

Signature

Month Day Year

18. Transporter 2 Acknowledgement of Receipt of Materials

Date

Printed/Typed Name

Signature

Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Date

Printed/Typed Name

Signature

Month Day Year

White - Original

Green - Transporter 1

Yellow - Transporter 2

Pink - TSD Facility

Gold-Red - Generator's first copy

ATTACHMENT E

- *Non-hazardous Manifest - Asbestos*

CITY OF ALAMOGORDO

1376 EAST 9TH STREET
ALAMOGORDO, NEW MEXICO 88310-6795
(505) 439-4355

WAS: MANIFEST for
SHIPMENT OF ASBESTOS WASTE TO
OTERO/LINCOLN COUNTY
REGIONAL LANDFILL
Located 23 Miles South on Highway 5
from Alamogordo, New Mexico

TRACKING NO.: N/A Texas

All applicable blanks MUST BE COMPLETED, including signatures.

PART I GENERATOR

A generator must sign and keep a copy of each manifest signed in accordance with CFR 40 262.23 (a-1) and retain a hand signed copy from the designated facility which received the waste. In accordance with CFR 40 262.40, this manifest must remain on file for a period of three years. Only HAND SIGNED copies are legal documents for generators.

PROJECT NAME: Montana / Spill Site GENERATOR NAME: Ft Bliss, DOE A-2C
ADDRESS: 11000 Montana ADDRESS: 2021 Club Rd
CITY/STATE/ZIP: El Paso, TX CITY/STATE/ZIP: Ft Bliss, Texas 79966
PHONE: N/A PHONE: (915) 568-7979

Name of Authorized Agent: LAVI KOMMAJOSYULA Signature: [Signature] Date Received: 12/27/99

PART II CONTRACTOR

NAME OF CONTRACTOR: Environmental Reconditioning
ADDRESS: 8630 Boeing St 12
CITY/STATE/ZIP: El Paso, TX 79925 PHONE: 778-3813
RQ Hazardous Substance, Solid, N.O.S., ORM-E,
NA 2212, (ASBESTOS)

RESPONSIBLE AGENCIES
TX Natural Resource Center
1700 N Oregon St
Austin, TX 78711

DOT Code of Federal Regulations
The CFR 49 of Transportation Regulations for asbestos are as follows:
171.2, 171.3, 172.10, 172.101, 172.205, 173.1090, 173.1300 and CFR 40-260,
261, 262.22 (60 Part III), 61.

CERTIFICATION

"I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packaged and labeled, and are in all respects in proper condition for transport by highway according to applicable international and government regulations and are not a hazardous waste as defined by CFR 40, Part 261."

Friable _____
Non-Friable XX _____
Blue, Brown (2212) _____
White (2590) _____
Bags 20 _____
Barrels _____
Weight _____
Cu.Yds. 4 yds _____

SPECIAL HANDLING INSTRUCTIONS AND ADDITIONAL INFORMATION:

Name of Authorized Agent: Tyran West Signature: [Signature] Date Received: 12/27/99

PART III TRANSPORTER

NAME OF TRANSPORTER #1: Environmental Reconditioning PERMIT #: 000057
ADDRESS: 8630 Boeing St 12 TRUCK #: _____
CITY/STATE/ZIP: El Paso, TX 79925 PHONE: _____

NAME OF TRANSPORTER #2: _____ PERMIT #: _____
ADDRESS: _____ TRUCK #: _____
CITY/STATE/ZIP: _____ PHONE: _____

The following statement must be signed by the truck driver prior to unloading at the OTERO/LINCOLN COUNTY REGIONAL LANDFILL facility: "I certify that no other material has been placed in this truck since the container(s) described in Part I of the form was/were loaded."

SIGNATURE OF TRANSPORTER #1: _____ DATE: 12/29/99
SIGNATURE OF TRANSPORTER #2: _____ DATE: 1/1/00

PART IV DISPOSAL SITE OFFICIAL

This is to certify that the OTERO/LINCOLN COUNTY REGIONAL LANDFILL, Operating under USEPA Permit No. 84607 has been approved for the disposal of Asbestos Waste, has received the above indicated waste (except for noted discrepancies) and has disposed of it as follows:

DISCREPANCY EXPLANATION: _____
Cell # 6A Cell Grid #: 1-2-3-6-9-10-13-14 Depth From: 0' To 3'
Authorized Signature: [Signature] Date Received: 12/29/99
MANIFEST NO.: 16388

Responsible Agency:
NM Environment Dept
Air Control Bureau
2048 Galisteo
Santa Fe, NM 87505
(505) 827-1494



JCB #11663

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form approved. OMB No. 2050-0039.

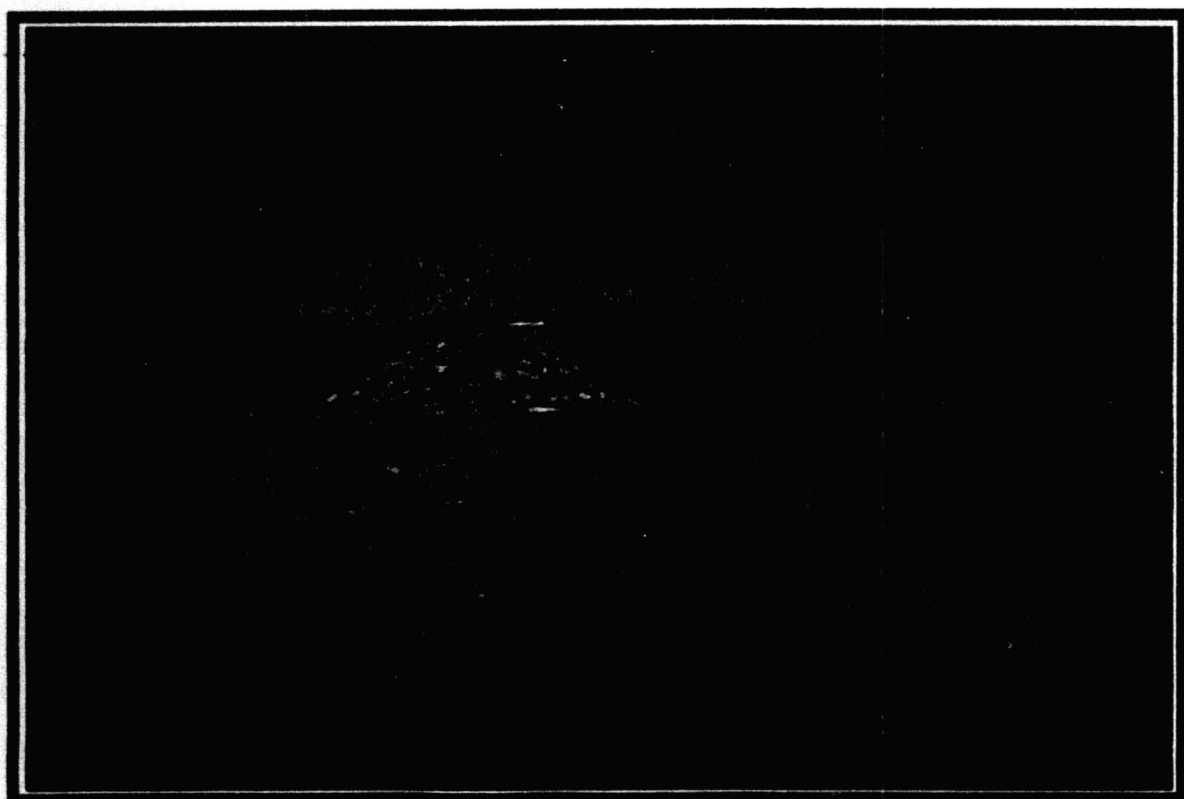
UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No.		Manifest Document No.		2. Page 1 of		Information in the shaded areas is not required by Federal law.					
3. Generator's Name and Mailing Address FT Bliss, DOE ATZC 2021 Club Rd, Ft Bliss Texas 79916						A. State Manifest Document Number 02108986							
						B. State Generator's ID							
4. Generator's Phone (915) 568-7479						C. State Transporter's ID 40-0002							
5. Transporter 1 Company Name Environmental Reconditioning						D. Transporter's Phone 905-778-3813							
6. US EPA ID Number NM000007000						E. State Transporter's ID							
7. Transporter 2 Company Name						F. Transporter's Phone							
8. US EPA ID Number						G. State Facility's ID							
9. Designated Facility Name and Site Address Otero Lincoln County Landfill 23 miles S on Hwy 34 from Alamogordo, NM 88310						H. Facility's Phone 505-439-4355							
10. US EPA ID Number													
11. US DOT Description (including Proper Shipping Name, Hazard Class, ID Number and Packing Group)						12. Containers No. Type		13. Total Quantity		14. Unit Wt./Vol.		15. Waste No.	
a. RQ, Hazardous Substance, Solid-NOS CPM-E (Asbestos)								4		gals			
b.													
c.													
d.													
J. Additional Descriptions for Materials Listed Above						K. Handling Codes for Wastes Listed Above							
L. Special Handling Instructions and Additional Information													
<p>16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packaged, marked, and labeled/placarded, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations, including applicable state regulations.</p> <p>If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment. OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.</p>													
Printed/Typed Name						Signature				Month Day Year			
17. Transporter 1 Acknowledgement of Receipt of Materials						Date							
Printed/Typed Name COALIN MOISE GALLARDO						Signature				Month Day Year			
18. Transporter 2 Acknowledgement of Receipt of Materials						Date							
Printed/Typed Name						Signature				Month Day Year			
19. Discrepancy Indication Space													
20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.													
Printed/Typed Name Johnny M Doldorck						Signature				Month Day Year 12 29 99			

ATTACHMENT F

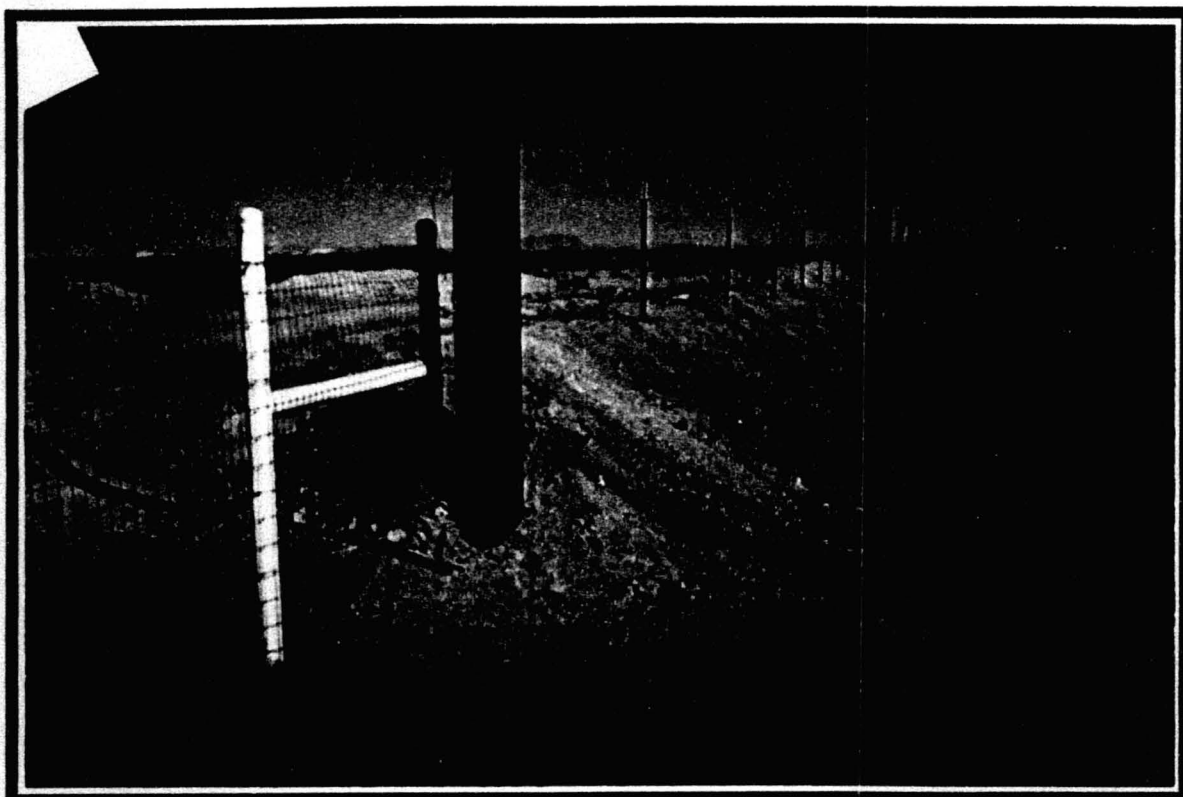
- *Photographic Documentation*



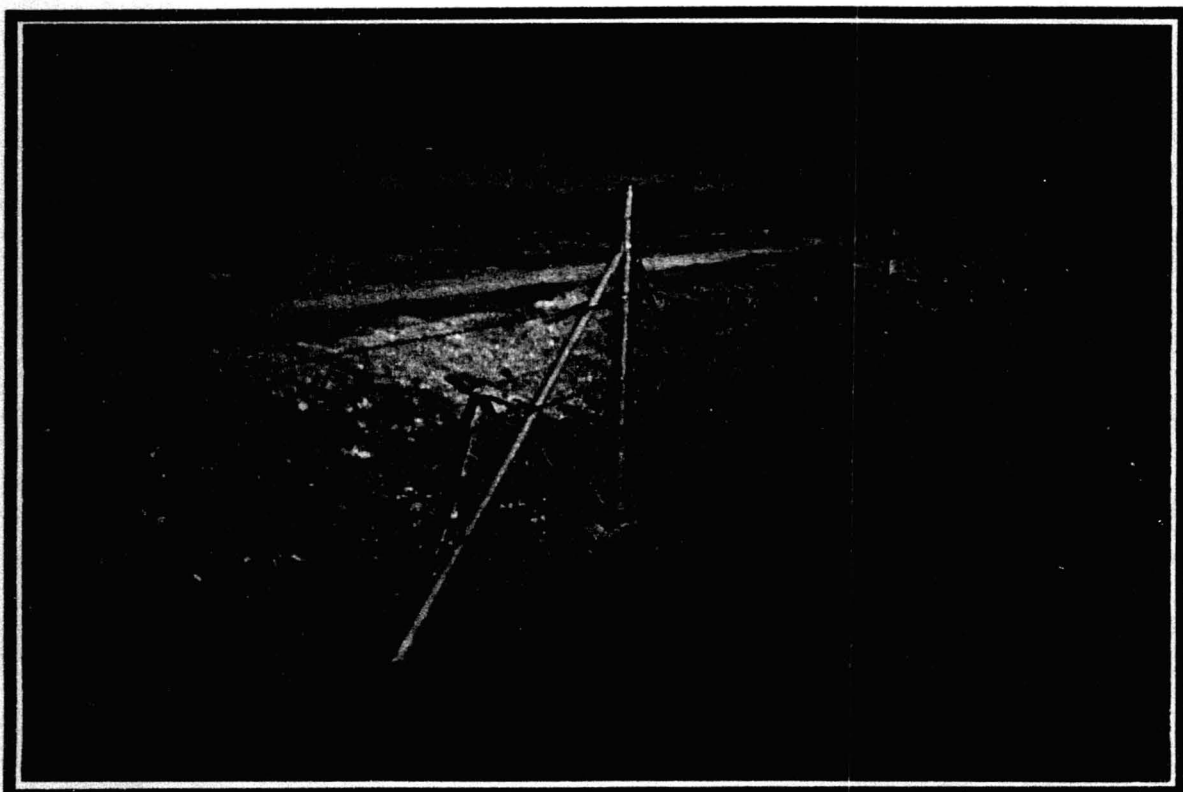
Photograph No. 1: View of the subject site from Montana Avenue's main gate looking north along the north-south pathway.



Photograph No. 2: Typical view of a stockpile consisting of concrete debris/rubble before clean up.



Photograph No. 3: The surveying was done to determine the east-west property line along Montana Avenue. Note the red-colored survey stake near the Montana right-of-way.



Photograph No. 4: The repaired earthen berm and the newly installed barbwire fence along Montana Avenue.



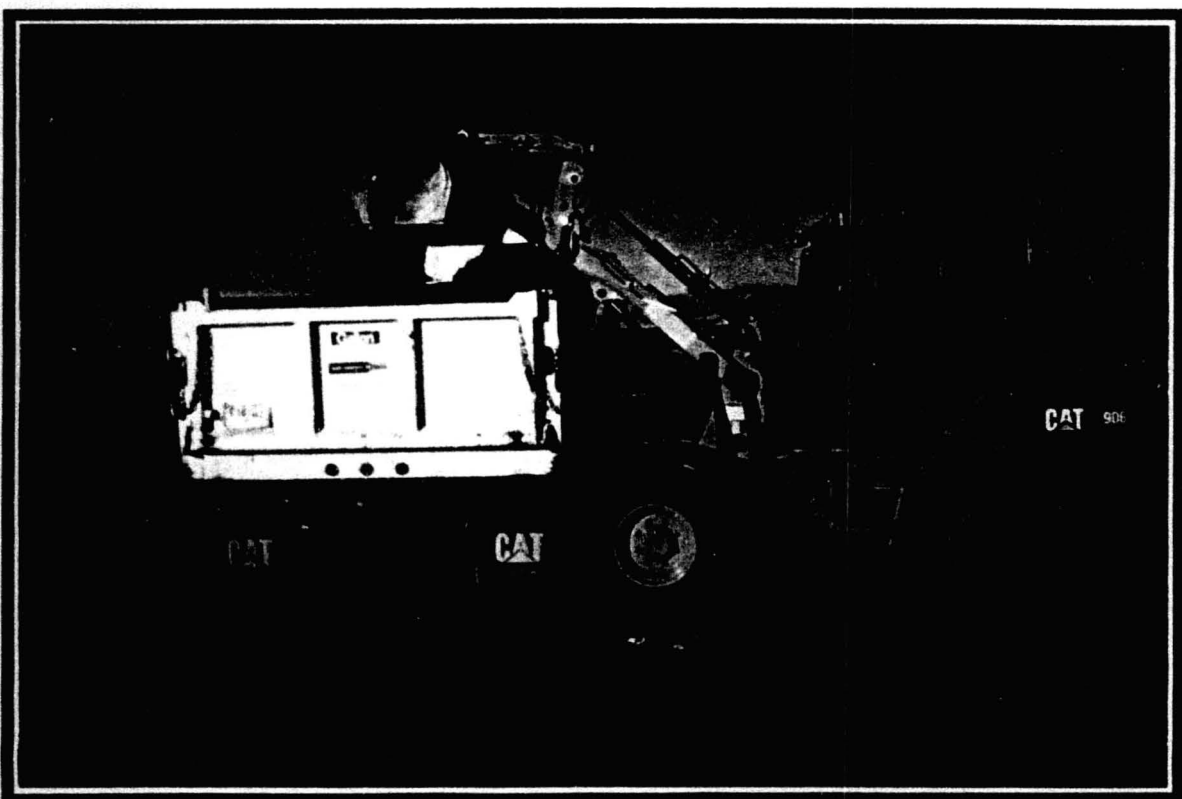
Photograph No. 5: Typical view of the subject site with concrete debris and roofing materials before clean-up actions were initiated.



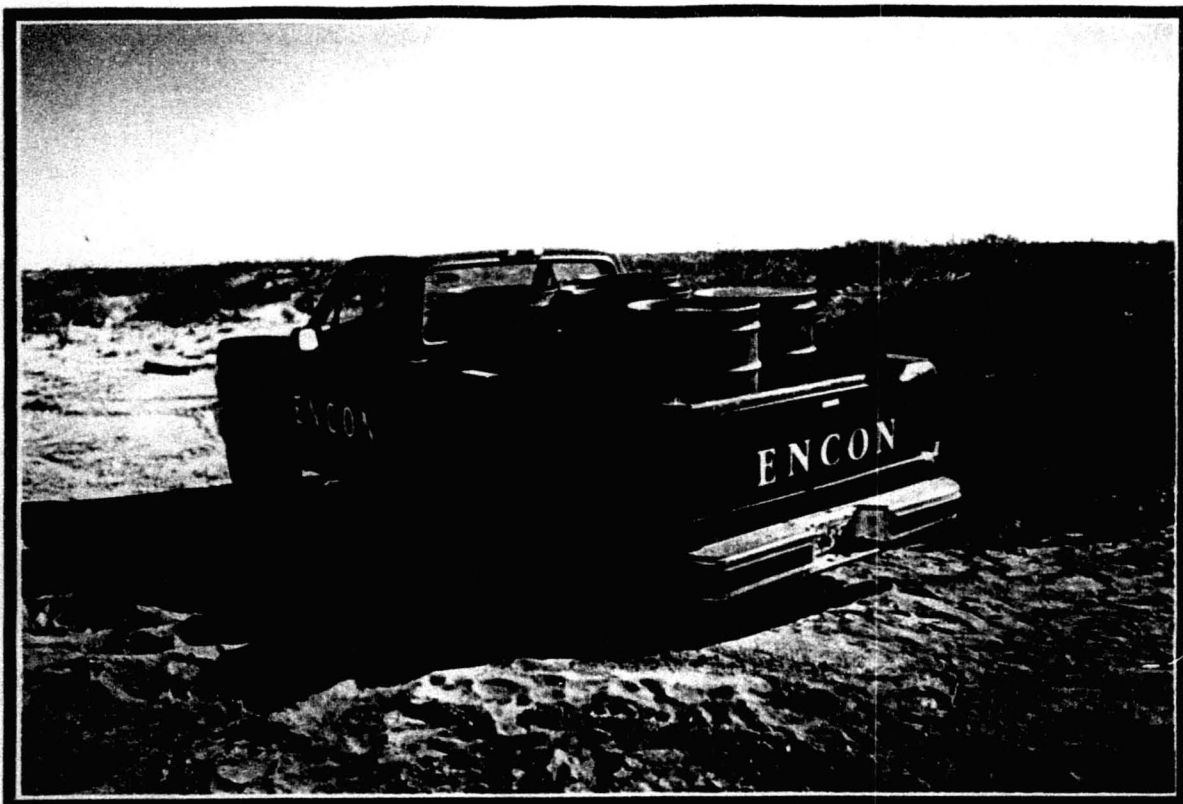
Photograph No. 6: General view of the field operations at the subject site where a medium-size bobcat was used to relocate the heavier debris to various collection areas.



Photograph No. 7: Typical view of the subject site with a backhoe loading the construction debris.



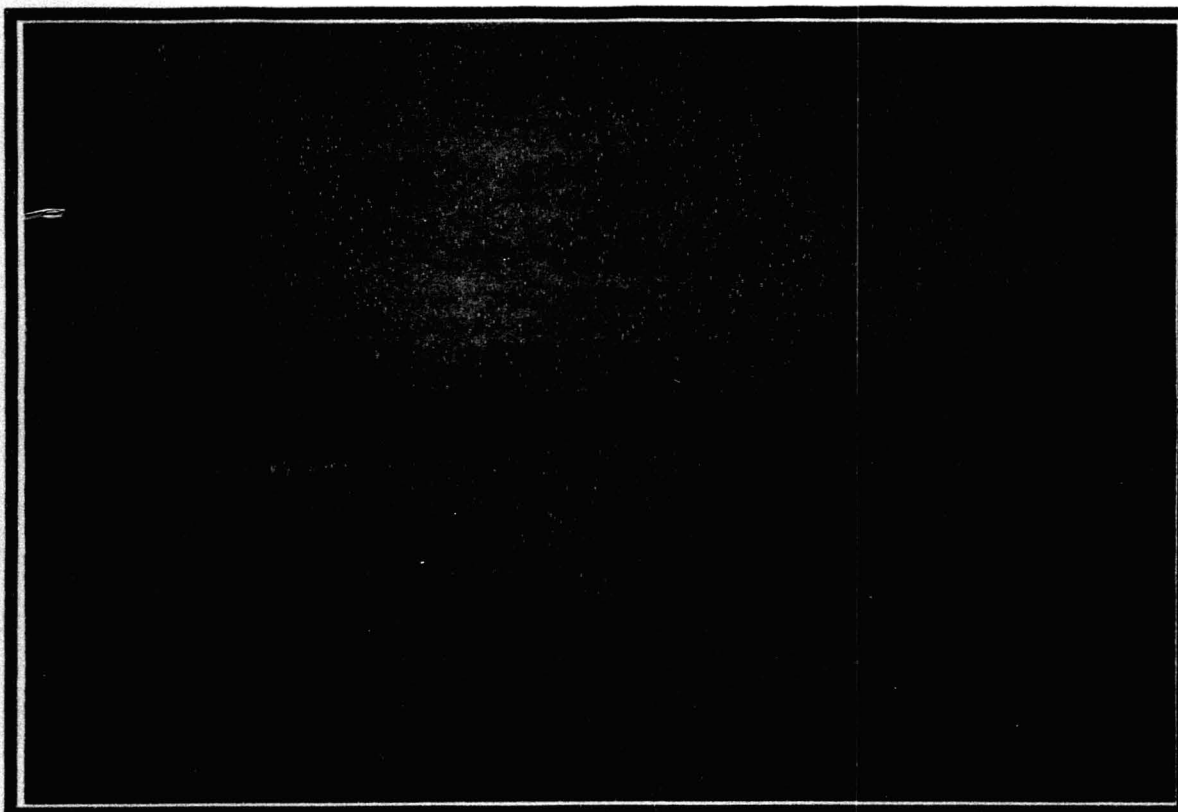
Photograph No. 8: A medium-size backhoe was used to load the dump trucks for disposal activities.



Photograph No. 9: View of disposal activities where hydrocarbon contaminated soil is being removed from the subject site.



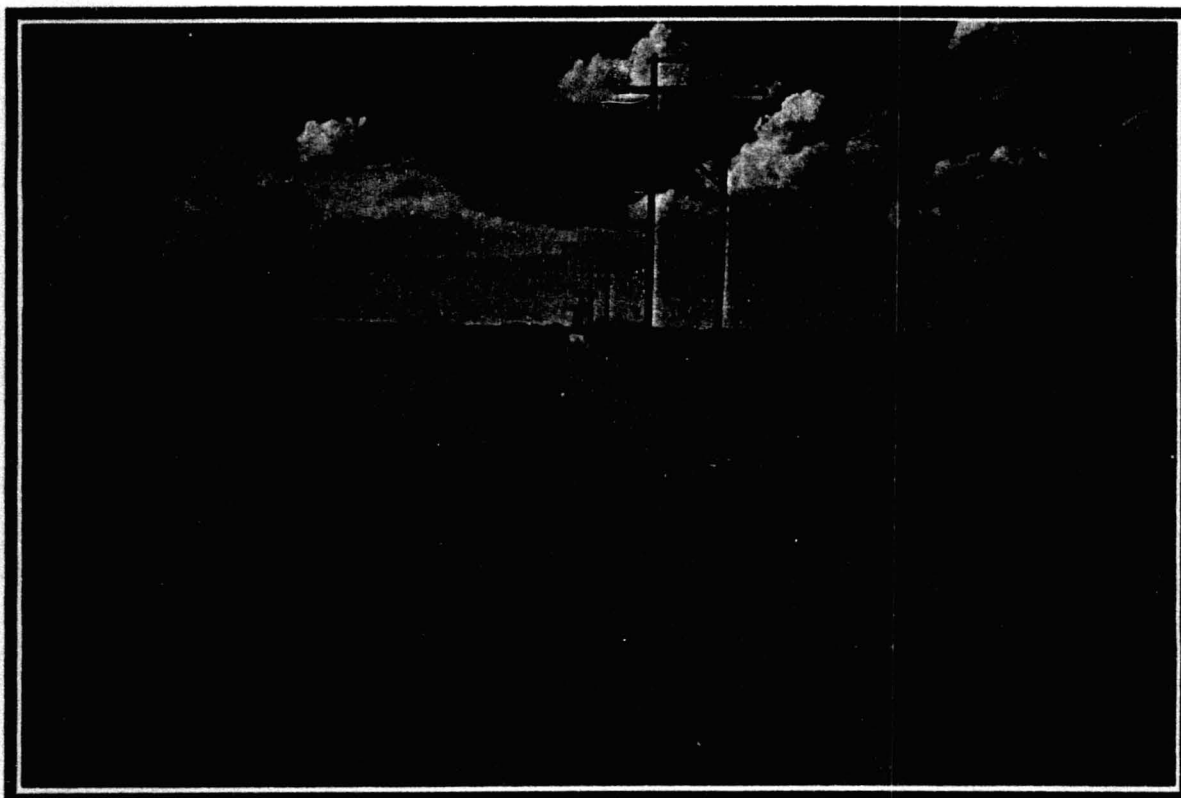
Photograph No. 10: View of the asbestos disposal activities at the subject site.



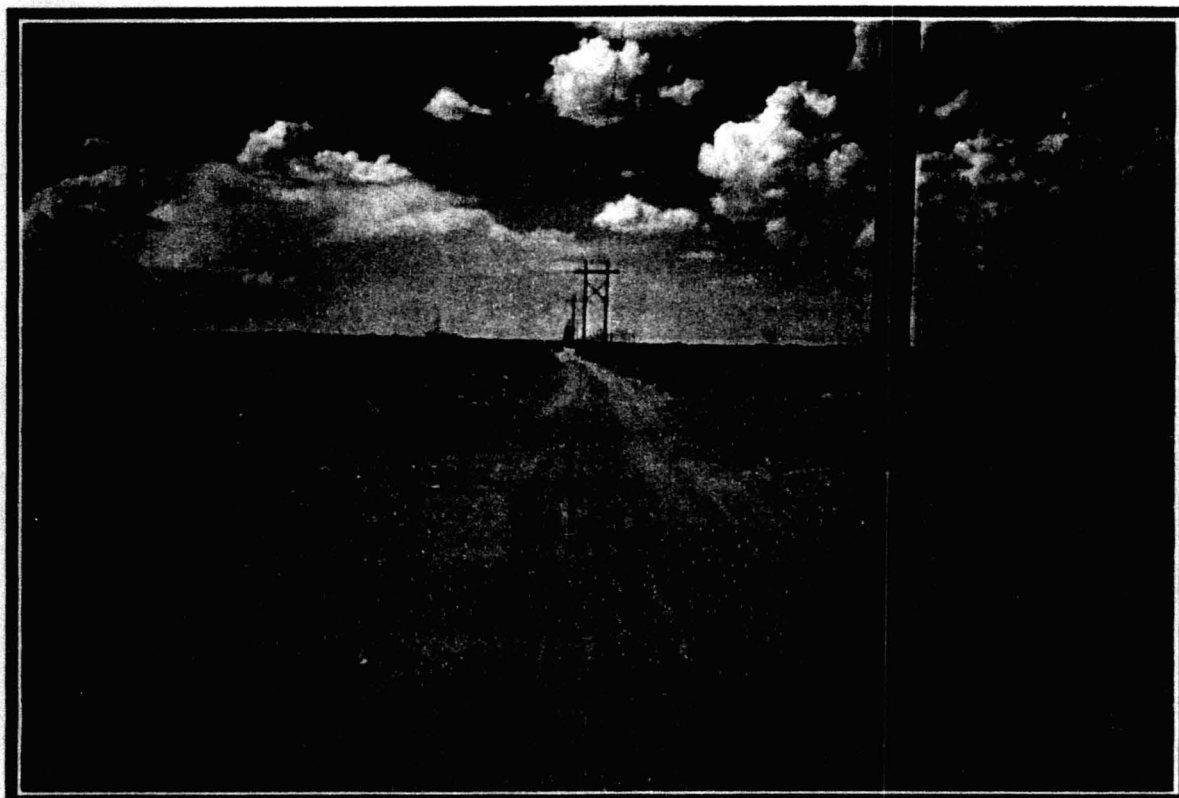
Photograph No. 11: View of the north-south pathway of the subject site after completing clean-up activities.



Photograph No. 12: General view of the remediated subject site near the main entrance.



Photograph No. 13: View of remediated area near power pole 6, which previously contained large quantities of construction debris (May 25, 2000).



Photograph No. 14: View of remediated area between power poles 8 and 9, near northern portion of the north-south pathway (May 25, 2000).

APPENDIX D

THE EDR WATER WELL REVIEW



The EDR-Water Well Review

**Fort Bliss Rubble Dump Spill S
Montana Avenue
El Paso, TX 79916**

January 31, 2001

Inquiry Number: 587617-1

The Source For Environmental Risk Management Data

3530 Post Road
Southport, Connecticut 06490

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802

Environmental Data Resources, Inc.

Water Well Review Report

EDR reviewed available records made public by the state of Texas at the Texas Water Development Board (TWDB) and the Texas Natural Resource Conservation Commission (TNRCC) and obtained information identifying the approximate location of public and private water wells within the requested Area of Review (AOR). EDR researched the located and plotted water wells identified on county highway maps or USGS 7.5 minute topographic maps at the TWDB. EDR transferred the approximate water well locations onto a map for the client's review.

EDR cannot guarantee the accuracy of the information provided by state agencies. This review is intended to provide the user with a "working approximation" of reported well locations. The following are guidelines used to review available driller logs for water wells associated with client site information within the AOR.

- Identify Located Wells within the AOR according to the TWDB files.
- Identify Plotted Wells within the AOR according to the TWDB files.
- Identify Partially Numbered Wells within the AOR according to the TNRCC files containing records submitted by the well driller.
- Identify Unnumbered Wells within the AOR according to the TNRCC files containing records submitted by the well driller.

Description of Terms

Area of Review-(AOR):

Standard area of review is a 1/2 mile circumference around client specified target property.

Located Water Well:

Well locations that have been field checked by a TWDB or USGS staff member, spotted on a USGS 7.5' Topographical or county highway map, assigned a unique identification number, and filed at the TWDB.

Plotted Water Well:

Approximate well locations spotted on county highway maps by the TWDB staff members according to information submitted on the driller's log. The accuracy of the location for these wells is dependent on the driller. The state assigned unique identification numbers to these wells, but in high-density areas, a single identification number may represent multiple well locations. The TWDB eliminated this plotting activity in June 1986.

Partially Numbered Water Well:

Water well locations established to within a 2.5 minute topographic quadrangle and identified by the TNRCC according to maps submitted with the driller's log. Each water well was assigned a State ID number by the TNRCC. **Note:** This method for recording water well locations was procedure from 1986 to 1991.

Unnumbered Water Well:

Well locations identified on the driller's logs and corresponding driller's maps maintained by the TNRCC records. **Note:** The TNRCC implemented this procedure in 1991.

Please call EDR Nationwide Customer Service at
1-800-352-0050 (8am-8pm ET)
with questions or comments about your report.
Thank you for your business!

Disclaimer

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Environmental Data Resources, Inc.
Water Well Review

Site Name: Fort Bliss Rubble Dump Spill S

Inquiry #:587617-1

Address: Montana Avenue

City: El Paso

State: TX

Zip: 79916

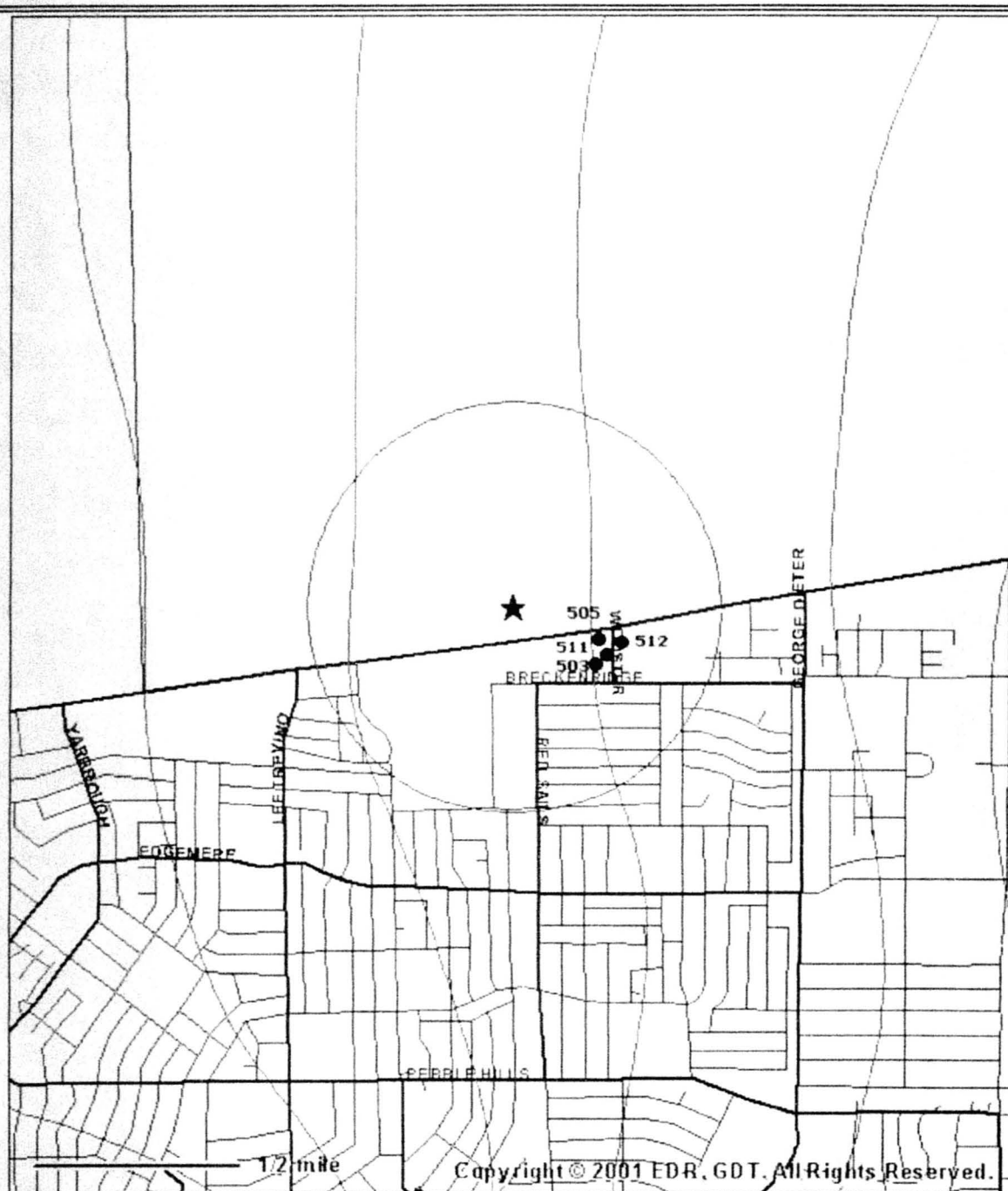
WELL CLASSIFICATION	NUMBER IDENTIFIED WITHIN AOR
LOCATED	4
PLOTTED	0
PARTIALLY NUMBERED	0
UNNUMBERED	0
TOTAL NUMBER IDENTIFIED	4

Located Water Wells:
49-14-503, 505, 511, 512

Plotted Water Wells:
NONE

Partially Numbered Water Wells:
NONE

Unnumbered Water Wells:
NONE



APPROXIMATE
LOCATIONS ONLY

WATER WELL LOCATION MAP
WELLS WITHIN A 1/2 MILE RADIUS
FORT BLISS RUBBLE DUMP SPILL SITE
MONTANA AVENUE
EL PASO, TX 79916
EL PASO COUNTY
USGS 7.5 MINUTE QUADRANGLE
Fort Bliss SE TX

EDR Environmental
Data
Resources, Inc.

ENVIRONMENTAL DATA
RESOURCES
1000 WEST AVE., SUITE A
AUSTIN, TEXAS 78701
800-352-0050 FAX: 800-231-6802

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer _____

Field No. W-84

State Well No. 49-14-503 ✓

Owner's Well No. #2 (?)

County EL PASO

1. Location: 1/4 Sec. 1/4 Sec. 1/4 Sec., Block _____ Survey 314800 N/1041817.1

Well 1/2 mi. back of Cabaret Club - 7.9 mi. E. of intersection McRae & U.S. 62

2. Owner: Harry S. Hoy Address: _____

Tenant: _____ Address: _____

Driller: C. Ballard Address: EL PASO

3. Elevation of 450 is 3975 ft. above sea, determined by Type

4. Drilled: Aug 1967; Dug, Cable Tool, (Rotary)

5. Depth: Rept. 455 ft. Meas. _____ ft.

6. Completion: Open Hole, Straight Wall, Underreamed, (Gravel Packed)

7. Pump: Mfr. _____ Type Submersible

No. Stages _____, Bowl Diam. _____ in., Setting _____ ft.

Column Diam. _____ in., Length Tailpipe _____ ft.

8. Motor: Fuel Electric Make & Model _____ HP. 4

9. Yield: Flow _____ gpm, Pump 85 gpm, Meas., Rept., Est. _____

10. Performance Test: Date _____ Length of Test _____ Made by _____

Static Level _____ ft. Pumping Level _____ ft. Drawdown _____ ft.

Production _____ gpm Specific Capacity _____ gpm/ft.

11. Water Level: 315 ft. Aug 1967 above surface. which is _____ ft. above surface.
470 ft. 10-9 1973 below surface. which is _____ ft. above surface.
 _____ ft. 19 above surface. which is _____ ft. above surface.
 _____ ft. 19 below surface. which is _____ ft. above surface.
 _____ ft. 19 below surface. which is _____ ft. above surface.

12. Use: Dom. Stock, Public Supply, Ind., Irr., Waterflood, Observation, Not Used, Not used for his own use and Cabaret Club

13. Quality: (Remarks on taste, odor, color, etc.) _____

Temp. _____ °F, Date sampled for analysis _____ Laboratory _____

Temp. _____ °F, Date sampled for analysis _____ Laboratory _____

Temp. _____ °F, Date sampled for analysis _____ Laboratory _____

14. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log,

Formation Samples, Pumping Test, _____

15. Record by: GIL JREYIZO Date 10-3 1973

Source of Data U.S.G.S. Solid - by M.E. Davis 8-31-67

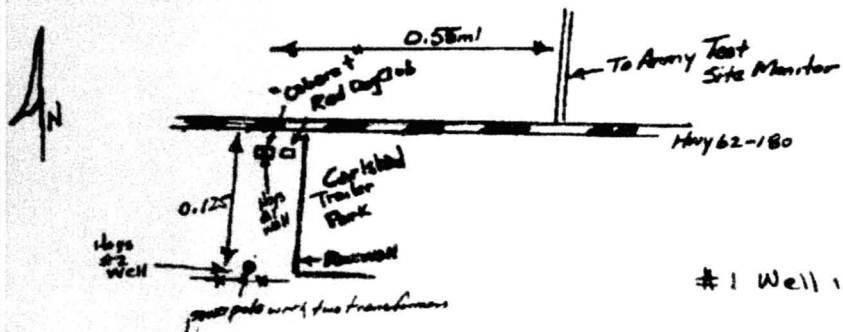
16. Remarks: 10/9/73 UTM - well sealed in concrete slab on exterior of
State Health Dept. Over place to metal weather on top of cap plate

CASING & BLANK PIPE			
Cemented From		ft. to	
Diam. (in.)	Type	Setting, ft.	
		from	to
8	steel	0	455

WELL SCREEN			
Screen Openings		Setting, ft.	
Diam. (in.)	Type	ft.	
		from	to
8	Torch Slot	365	455

duplicate

See previous page



#1 Well is inside the "Cobaret Club"

Central Records
Texas Dept. of Water Resources

AUG 17 1978

RECEIVED

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer -----

Field No. W-77State Well No. 49-14-505Owner's Well No. #1County El Paso1. Location: 1/4, 1/4 Sec. Block SurveyCarlsbad Mch. Home Park Montana2. Owner: Northwest Furniture Address: OyerDr.: Jim Hardison Address: -----Driller: Brown & Ledford Address: -----3. Elevation of LSR is 3976 ft. above mal, determined by Type4. Drilled: 19 60; Dug, Cable Tool, Rotary, -----5. Depth: Rept. 430 ft. Meas. ----- ft.6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed7. Pump: Mfr. Bradley & Bradley Type SubmersibleNo. Stages -----, Bowl Dia. ----- in., Setting 400 ft.

Column Dia. ----- in., Length Tailpipe ----- ft.

8. Motor: Fuel Electric Make & Model ----- HP. 5

9. Yield: Flow ----- gpm, Pump ----- gpm, Meas., Rept., Est. -----

10. Performance Test: Date ----- Length of Test ----- Made by -----

Static Level ----- ft. Pumping Level ----- ft. Drawdown ----- ft.

Production ----- gpm Specific Capacity ----- gpm/ft.

11. Water Level: 1101 ft. rept. 10-9 19 73 above LSR on E line 40 ft. above LSR----- ft. rept. ----- 19 above ----- which is ----- ft. above surface.----- ft. rept. ----- 19 above ----- which is ----- ft. above surface.----- ft. rept. ----- 19 above ----- which is ----- ft. above surface.----- ft. rept. ----- 19 above ----- which is ----- ft. above surface.----- ft. rept. ----- 19 above ----- which is ----- ft. above surface.12. Use: Dom., Stock, Water Supply, Ind., Irr., Waterflooding, Observation, Not Used, provides water for trailer park & Bldg

13. Quality: (Remarks on taste, odor, color, etc.) -----

Temp. ----- °F, Date sampled for analysis ----- Laboratory EPH

Temp. ----- °F, Date sampled for analysis ----- Laboratory -----

Temp. ----- °F, Date sampled for analysis ----- Laboratory -----

14. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log,

Formation Samples, Pumping Test, -----

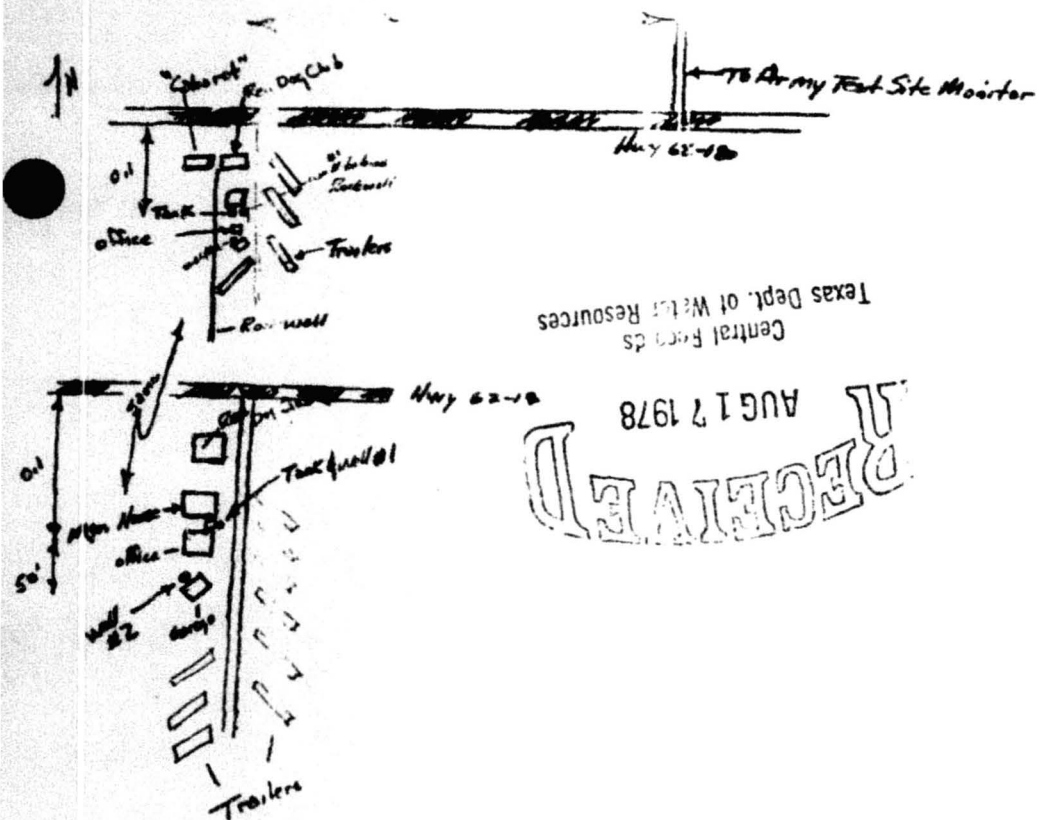
15. Record by: ----- Date ----- 19 -----

Source of Data -----

16. Remarks: Carl Ferrara was the ownerprior to Northwest Furniture (Mr. John Galvan)John Galvan & Tom McKeever own Northwest

CASTING & BLANK PIPE			
Cemented From		ft. to	
Diam. (in.)	Type	Setting, ft.	
		from	to
6	steel	0	430

WELL SCREEN			
Screen Openings			
Diam. (in.)	Type	Setting, ft.	
		from	to
6	screen		



Central Foods
Texas Dept. of Water Resources

AUG 17 1978

RECEIVED
AUG 17 1978

Typewrite (Black ribbon) or
(soft pencil or black)
Do not use ball point

Texas State Department of Health Laboratories
1100 West 49th Street
Austin, Texas 78756

WDBE-GW ONLY
Program No. 6524-50
Proj. No. 76291

CHEMICAL WATER ANALYSIS REPORT

Send report to:

Ground Water Data and Protection Division
Texas Water Development Board
P.O. Box 13087
Austin, Texas 78711

County 071 EL PASO
State Well No. JL 49 14 503
Well No. 07 07 76
Date Collected 07 07 76
By M. M. M. R. R. R.

Location 11048 MONTANA EL PASO TX 79935
Source (type of well) SUBMERSIBLE Owner J. GALVAN + MCKEEVER - CARLSBAD TRACT FAR.
Date Drilled — Depth 440 ft. WBF HUECO BOLSON
Producing intervals — Water level 4TH ft.
Sampled after pumping — hrs. Yield — GPM (meas. est.) Temperature 80 °F — °C
Point of collection FAUCET AT PUMP Appearance ☒ clear ☐ turbid ☐ colored ☐ other
Use DOM. Remarks SEND 1 COPY TO OWNER + 1 COPY TO FIELD DATA TEAM 3 EL PASO TEXAS

(FOR LABORATORY USE ONLY)

CHEMICAL ANALYSIS

Laboratory No. 316970

Date Received Aug 19 1976

Date Reported AUG 19 1976

	MG/L	ME/L
Alkalinity	<u>28</u>	
Calcium	<u>55</u>	<u>2.75</u>
Magnesium	<u>13</u>	<u>1.10</u>
Sodium	<u>152</u>	<u>6.59</u>
Total		<u>10.44</u>
[] Potassium		
[] Manganese		%Na
[] Boron		SAR
[] Total Iron		RSC
[] (other)	MG/L	
Specific Conductance (micromhos/cm ²)	<u>1121</u>	
Diluted Conductance (micromhos/cm ²)	<u>9 x 140</u>	
	<u>1260</u>	

	MG/L	ME/L
Carbonate	<u>0</u>	
Bicarbonate	<u>58</u>	
Sulfate	<u>118</u>	<u>1.94</u>
Chloride	<u>74</u>	<u>1.53</u>
Fluoride	<u>252</u>	<u>7.10</u>
Nitrate	<u>0.5</u>	
pH	<u>4.5</u>	
Total	<u>7.9</u>	<u>10.57</u>
1/ Dissolved Solids (sum in MG/L)		<u>640</u>
Phenolphthalein Alkalinity as CaCO ₃		<u>0</u>
Total Alkalinity as CaCO ₃	<u>1.94</u>	<u>97</u>
Total Hardness as CaCO ₃	<u>3.85</u>	<u>193</u>
2/ Nitrogen Cycle		
Ammonia - N		
Nitrite - N		
Nitrate - N		
Organic Nitrogen		
Analyst		Checked By <u>49-14-503</u>

1/ The bicarbonate reported in this analysis is converted by computation (multiplying by 0.4917) to an equivalent amount of carbonate, and the carbonate figure is used in the computation of this sum.

2/ Nitrogen cycle requires separate sample.

3/ Total Iron requires separate sample.

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer _____

Field No. W-77State Well No. 49-14-505Owner's Well No. #1County EL PASO1. Location: 1/4, 1/4 Sec., Block Survey 314755 U N 6 1922 LPackhead Hwy2. Owner: Harry S. Hoy Address: Box 3611, Station A, El Paso, Texas

Tenant: _____ Address: _____

Driller: Baward Address: El Paso, Texas3. Elevation of LSO is 3975 ft. above sea level, determined by Type4. Drilled: 1954; Dug, Cable Tool, Rotary5. Depth: Rept. 340 ft. Meas. _____ ft.6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed7. Pump: Mfg. _____ Type Cylinder

No. Stages _____, Bore Dia. _____ in., Setting _____ ft.

Column Dia. _____ in., Length Tailpipe _____ ft.

8. Motor: Fuel Gasoline Make & Model Chevrolet HP. _____

9. Field Flow _____ gpm, Pump _____ gpm, Meas., Rept., Est. _____

10. Performance Test: Date _____ Length of Test _____ Made by _____

Static Level _____ ft. Pumping Level _____ ft. Drawdown _____ ft.

Production _____ gpm Specific Capacity _____ gpm/ft.

11. Water Level: 300 ± ft. rept. 1954 above _____ which is _____ ft. above surface._____ ft. rept. 19 below _____ which is _____ ft. above surface._____ ft. rept. 19 below _____ which is _____ ft. above surface._____ ft. rept. 19 below _____ which is _____ ft. above surface._____ ft. rept. 19 above _____ which is _____ ft. above surface.12. Use: Stock, Water Supply, Ind., Irr., Waterflooding, Observation, Not Used Abandoned - capped13. Quality: (Remarks on taste, odor, color, etc.) Reported to be softTemp. _____ °F, Date sampled for analysis 3-23-60 Laboratory X = 200 ppmTemp. _____ °F, Date sampled for analysis _____ Laboratory X = 885Temp. _____ °F, Date sampled for analysis _____ Laboratory TDS = 625

14. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log,

Formation Samples, Pumping Test, _____

15. Record by: GIL TREVIZO Date 10-3-1973Source of Data U.S.G.S. Sched. by E.B. Leggat 3-23-6016. Remarks: Well inside "Cobart" building - not used anymoredo not use this infoSee well #2 (49-14-503)
(Sketch)(Abandoned - capped)
49-14-505

RIGGS

JL-49-14-400

M I L

3937 Sand Pt.
BM

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Well #505

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EL PASO

INTERNATIONAL AIRPORT

LANE CITY

Drive-in Theater

BDY

BDY

TELEPHONE

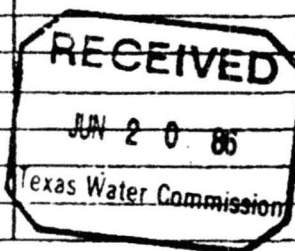
WELL 505

T = 23.0°

MP = 7.25'

STATIC LEVEL 345.50DATE 2-3-86

TIME	PUMPING LEVEL	DRAW DOWN	GPM	SP. CAP.
Started Pumping AT 6:30 AM				
9:30	387.25	41.75	800	19.2
10:30	386.10	40.60	800	19.7
11:30	386.20	40.70	800	19.7
12:30	386.70	41.20	800	19.4
01:30	386.55	41.05	800	19.5
02:30	387.40	41.90	800	19.1
03:30	387.40	41.90	800	19.1
04:30	387.65	42.15	800	19.0
05:30	387.45	41.95	800	19.1
06:30	390.45	41.95	800	19.8
07:30	390.60	43.10	800	17.9
08:30	390.70	43.20	800	17.7
09:30	390.60	43.10	800	17.7
10:30	390.65	43.15	800	17.7
11:30	390.10	44.60	800	17.9
12:30	390.00	44.50	800	18.0
01:30	389.65	44.15	800	18.1
02:30	390.85	43.35	800	17.6
03:30	390.90	43.40	800	17.6
04:30	390.75	43.75	800	17.7
05:30	390.60	43.10	800	17.7
06:30	391.30	43.80	800	17.7
07:30	390.30	44.80	800	17.9
08:30	390.00	44.50	800	18.0
08:30	Pump Off			
08:37	354.94			
03:43	353.89			
09:00	352.41			
09:30	350.97			
10:00	352.19			



4,03



WELL DATA

WELL NUMBER 505

PUMP DATA

Make _____
 Type _____
 Stages _____
 Tubing _____
 Shaft _____
 Column _____
 Serial Number _____
 Setting _____
 O. D. Bwls _____
 Capacity { GPM _____
 Feet Head _____

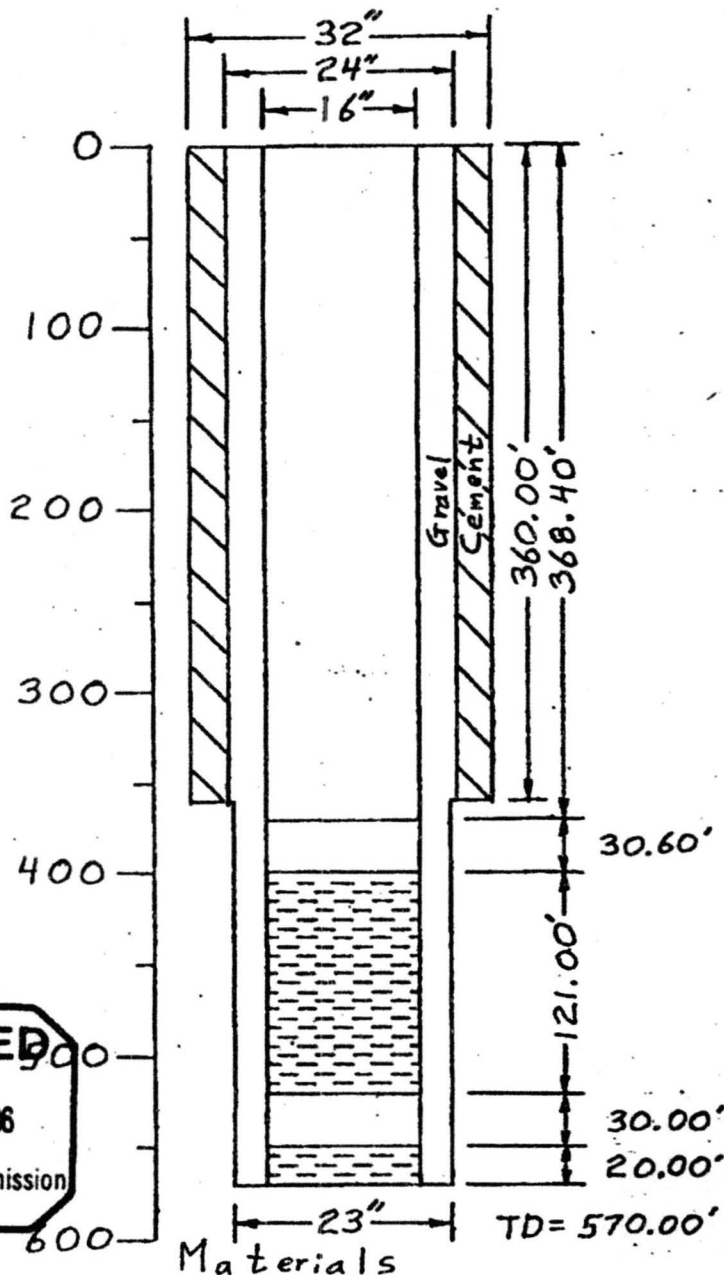
MOTOR DATA

Make _____
 Volts _____
 Amps _____
 Type _____
 Motor H.P. _____
 Speed _____
 Cycles-Phase _____
 Serial Number _____
 Date Installed _____

SCALE

Vertical 1" = 100'
 Horizontal 1" = 20'

MATERIALS



RECEIVED
 JUN 20 86
 Texas Water Commission

Size	Length	Wall	Type
24"	360.00'	0.250"	Steel
16"	398.40'	0.281"	Steel
16"	30.60'	0.281"	Galv. Steel

Screen

16"	141.00'	35 lbs/ft	Galv. Steel Johnson WW Hi-Cap; Slot=0.1"
-----	---------	-----------	---

DRILLERS' LOG

WELL NO. 505

JOB NO. 1005-058

LOCATION AIRPORT

20 - D.P

4 - 3 1/2 D.C



49-44-505

Move On 12/4/85	Started	Finished	Depth	Bit Size
Rat Hole	12-9-85	12-9-85		11"
Test Hole	12-9-85	12-12-85	777	8 3/4"
Electric Log	12-12-85	12-12-85		
Surface Hole	12-16-85	12-18-85	360	32" Reamer
Completion Hole	1-3-86	1-7-86	570	23" Bit
Move Off				

OUTSIDE SERVICES

Cementing: Date _____ Company _____

No. of Sacks _____ Mix _____

Service Charge _____

Mileage _____

Welding: Date 1-8-85 Company IXL, Inc.

Surface Pipe 24" OD: 360 ft.

Liner Pipe 16" OD: 430 ft.

Screen 16" OD: 1-17 ft.

GRAVEL

Yds. Ordered _____

Yds. Used _____

Date Graveled 1-8-86

WATER SAMPLES

[illegible]
$$\begin{array}{r} 64.90 \\ 30.25 \\ - 95.60 \\ \hline 126.05 \end{array}$$
$$\begin{array}{r} 1.) \quad \begin{array}{r} 93.60 \\ 30.80 \\ \hline 124.40 \\ 30.00 \\ \hline \end{array} \\ 2.) \quad \begin{array}{r} 154.40 \\ 28.20 \\ \hline \end{array} \\ 3.) \quad \begin{array}{r} 182.60 \\ 30.50 \\ \hline \end{array} \\ 4.) \quad \begin{array}{r} 213.10 \\ 30.80 \\ \hline \end{array} \\ 5.) \quad \begin{array}{r} 243.90 \\ 30.00 \\ \hline \end{array} \\ 6.) \quad \begin{array}{r} 273.90 \\ 30.00 \\ \hline \end{array} \\ 7.) \quad \begin{array}{r} 303.90 \end{array} \end{array}$$

$$\begin{array}{r} 30.80 \\ 73.90 \\ \hline 30.00 \\ 303.90 \\ \hline \end{array}$$
 T.O
 correct me

DRILL STEM TALLY

Bit Size 8 1/2

pint No.	Joint Length	Total Length	Remarks
R+S	2.70		
K-11	34.60	37.30	✓
DC #1	25.95	63.25	✓
D.C. #2	30.35	93.60	SURE - SHOT
D.C. #1	23.60	117.20	
4V3 1/2 Sub	3.20	120.40	
#2	25.10	145.50	
#3	23.95	169.45	SURE SHOT
#4	24.20	193.65	
D.P. #1	30.80	224.45	✓
2	30.00	254.45	SURE SHOT Kelly down
3	28.20	282.65	✓
4	30.50	312.15	✓
5	30.80	343.95	SURE SHOT ✓
6	30.00	373.95	✓
7	30.00	403.95	(Kelly down)
8	30.25	434.20	SURE SHOT
9	30.15	464.35	✓
10	30.00	494.35	✓
11	30.10	524.45	SURE SHOT
12	30.80	555.25	Kelly down
13	30.50	585.75	✓
14	29.40	615.15	Kelly down SURE SHOT
15	30.00	645.15	✓
16	30.60	675.75	Kelly down
17	30.35	706.10	SURE SHOT
18	30.80	736.90	
19	30.00	766.90	

49-14-505

Bit Size

360

60
62

Use this tool
6" 12" tally
To Clean out
TALLY hole

Bit Size 32" Reamer

49-14-505

DRILL STEM TALLY

Bit Size _____

check
your
Sport tally

DRILL STEM TALLY

Bit Size 17" R.B.F

49-14-505

Joint No.	Joint Length	Total Length	Remarks	Joint No.	Joint Length	Total Length	Remarks
				B.S	2.30		
				Kelly	34.60	36.90	
				D.C. #1	25.95	62.85	
				" 2	30.35	93.20	
				D.P. #1	30.80	124.00	
				2	30.00	154.00	
				3	28.00	182.00	
				4	30.50	212.50	
				5	30.80	243.30	
				6	30.00	273.30	
				7	30.00	303.30	
				8	30.25	333.55	
				9	30.15	363.70	
				10	30.00	393.70	
				11	30.10	423.80	
				12	30.80	454.60	Kelly up 12
				13	30.50	485.10	
				14	29.40	514.50	
				15	30.00	544.50	
				16	30.60	575.10	5' up on Kelly

Bit Size _____

[illegible]

Bit Size 23' Bit

Joint No.	Joint Length	Total Length	Remarks
S+B	5.50		
Kelly	34.60	40.10	
D.C. #1	25.95	66.05	
2	30.35	96.40	
D.P. #1	30.80	127.20	
2	30.00	157.20	
3	30.00	187.20	
4	30.50	217.70	
5	30.80	248.50	
6	30.00	278.50	
7	30.00	308.50	
8	30.25	338.75	
9	30.15	368.90	Kelly up 2 feet
10	30.00	398.90	
11	30.10	429.00	
12	30.80	459.80	
13	30.50	490.30	
14	29.40	519.70	
15	30.00	549.70	
16	30.60	580.30	Kelly up 8

DRILL STEM TALLY

Bit Size _____

FORMATION LOG

Joint No.	Joint Length	Total Length	Remarks	From	To	Thickness	Formation Material
				0	5	5	
				5	10	5	Top soil
				10	12	2	Caliche
				12	22	10	Gravel & loose gravel
				22	54	32	Gravel
				54	52		Clay
				52	81		Sand
				81	83	2	Clay with sand
				83	91	8	Clay
				91	95	4	Sand
				95	105	10	Soft Clay
				105	125	20	Sand
				125	137	12	Soft clay
				137	210	73	Sand
				210	226	16	Soft clay
				226	257	31	Sand
				257	264	7	Clay
				264	305	41	Sand
				305	313	8	Clay
				313	321	8	Gravel & loose clay
				321	348	27	Gravel
				348	374	26	Clay & sand
				374	393	19	Sand
				393	429	36	Clay
				429	431	2	Sand
				431	439	8	Clay
				439	445	6	Sand
				445			Clay

445-14-405

[illegible][illegible]

FORMATION LOG

SURFACE PIPE; OD 24"
Wall

From	To	Thickness	Formation Material
------	----	-----------	--------------------

Joint No.	Length	Total Length	Remarks
-----------	--------	--------------	---------

505
49

1	40.20		
2	39.70	79.90	
3	39.30	119.20	
4	40.30	159.50	
5	40.30	199.80	
6	40.30	230.10	
7	39.40	289.50	
8	37.90	327.40	
9	37.90	355.30	
10	4.70	360.00	

OD

Wall

OD

16"

Wall

[illegible]

Joint No.	Length	Total Length	Remarks
1	20.00		Section
2	30.00	50.00	Blank
3	20.00	70.00	Section
4	20.50	90.50	
5	20.00	110.50	
6	20.50	131.00	
7	20.00	151.00	
8	20.00	171.00	
9	30.60	201.60	Galvanis!
10	39.20	240.80	Blank
11	39.50	280.30	
12	37.00	317.30	
13	39.90	357.20	
14	38.80	396.00	
15	35.50	431.50	
16	35.70	467.20	
17	35.80	503.00	
18	34.20	541.80	
19	28.20	570.00	

Slot _____

[illegible]

WELL 505 12/12/89

TD 570 Ft. Screen & Casing (16")

570'-550' Screen; 20' or 1 Joint

550'-520' Blank; 30'

520' - 400' Screen; 120' or 6 Joints

400° - 0 Blank; 400°

TOTAL 16" 570'

Surface Pipe (24")

0-360' Blank; 360'



505-41-6h

140' of screen
430' of Blank
570

$$\begin{array}{r} 464 \\ 25 \\ \hline 439 \end{array}$$

WATER ANALYSIS REPORT

DATE SAMPLE COLLECTED	2-04-86
DATE RECEIVED AT LABORATORY	2-04-86
DATE ANALYSIS COMPLETED	2-07-86

MILLIGRAMS PER LITER

TOTAL DISSOLVED SOLIDS	549
PHENOL ALKALINITY AS Ca CO ₃	0
TOTAL ALKALINITY AS Ca CO ₃	98
TOTAL HARDNESS AS Ca CO ₃	108
CHLORIDES AS Cl	190
SULFATES AS SO ₄	50
FLUORIDES AS F	0.63
SILICA as SiO ₂	0.2
NITRATE as NO ₃	<4.43
TOTAL PHOSPHATES AS PO ₄	<0.09
CALCIUM as Ca	31
MAGNESIUM as Mg	7.3
SODIUM as Na	143
POTASSIUM as K	7.6

CHLORINE RESIDUAL (Mg/l)	—
TURBIDITY (N.T.U.)	0.24
SAMPLE TEMPERATURE (°C)	22
pH	8.12
LAB ELECTRICAL CONDUCTIVITY as µmhos/cm @ 25°C	926
FIELD ELECTRICAL CONDUCTIVITY as µmhos/cm @ 25°C	920
LANGELIER INDEX	0.0766
AGGRESSIVITY INDEX	12.1441
% Na OF TOTAL CATIONS	73

Well Number 505
Lab. Number C020486-5
Location _____

Owner _____
Sample Taker R. Speerka
Delivered By R. Speerka

CHECKING CORRECTNESS OF ANALYSIS

MEASURED DILUTED E.C.	985
CALCULATED DILUTED E.C.	996
% ERROR	+ 1.1

ANION - CATION BALANCE

ANIONS	Mg/l	Meg/l
CARBONATES as CO ₃	0	0.0000
BICARBONATES as HCO ₃	120	1.9608
CHLORIDES as Cl	190	5.8580
SULFATES as SO ₄	50	1.0400
FLUORIDES as F	0.63	0.0031
NITRATES as NO ₃	<4.43	0.0000
PHOSPHATES as PO ₄	<0.09	0.0000
TOTAL		8.3919
CATIONS	Mg/l	Meg/l
CALCIUM as Ca	31	1.5469
MAGNESIUM as Mg	7.3	0.6008
SODIUM as Na	143	6.2205
POTASSIUM as K	7.6	0.1946
TOTAL		8.5628

TOTAL ANIONS - TOTAL CATIONS =
± 0.1055 + 0.0155 (TOTAL CATIONS)
- 0.1708 = < ± 1SD 0.2366

Remarks: Test pumped 24 hrs at 800 GPM
2-05-86 Sample was sent for heavy analysis.

RECEIVED

JUN 20 86

Water Commission

Analyst

Michiko Spreitzer

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer _____

Field No. W-84State Well No. 49-14-511Owner's Well No. #2County Elliott1. Location: 1/4 1/4 Sec. _____ Block _____ Survey _____2. Owner: Capital Mobile Home Park Address: Montrose

Tenant: _____ Address: _____

Driller: Joe Bradland Address: _____3. Elevation of LSR is 3976 ft. above sea, determined by Typ.4. Drilled: 1971 Dug, Cable Tool, Rotary5. Depth: Rept. 440 ft. Meas. _____ ft.

6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed

7. Pump: Mfr. Red Jacket Type SubmersibleNo. Stages _____, Bore Dia. _____ in., Setting 440 ft.

Casing Dia. _____ in., Length Tailpipe _____ ft.

8. Motor: Fuel Electric Make & Model _____ HP. 59. Yield: Flow _____ gpm, Pump 28 gpm, Meas., Rept., Est. _____

10. Performance Test: Date _____ Length of Test _____ Made by _____

Static Level _____ ft. Pumping Level _____ ft. Drawdown _____ ft.

Production _____ gpm Specific Capacity _____ gpm/ft.

11. Water Level: UTM ft. rept. 10-10-73 above300 ft. 7 1971 below

ft. rept. 19 above

ft. meas. 19 below

ft. rept. 19 above

ft. meas. 19 below

12. Use: Dom., Stock, Public Supply, Ind., Irr., Waterflooding, Observation, Not Used, provides water for trailer park of Red Dog Club

13. Quality: (Remarks on taste, odor, color, etc.)

Temp. 80 °F, Date sampled for analysis 7/7/76 Laboratory _____

Temp. _____ °F, Date sampled for analysis _____ Laboratory _____

Temp. _____ °F, Date sampled for analysis _____ Laboratory _____

14. Other data available as circled: Driller's Log Radioactivity Log, Electric Log,

Formation Samples, Pumping Test, _____

15. Record by: Henry Muraz Date 10-9 19 73Source of Data Mr. Ferrara 12754 Montrose

16. Remarks:

Provides water for 88 trailers plusRed Dog Club and Overnight spaces.Contact Mr. Ferrara for information

CASING & BENT PIPE			
Cemented From _____ ft. to _____ ft.			
Diam. (in.)	Type	Setting, ft.	
		from	to
8	steel	0	440

which is _____ ft. above surface.
 which is _____ ft. below surface.
 which is _____ ft. above surface.
 which is _____ ft. below surface.
 which is _____ ft. above surface.
 which is _____ ft. below surface.

WELL SCREEN			
Screen Openings			
Diam. (in.)	Type	Setting, ft.	
		from	to
8	slotted	340	440

Send original copy by
certified mail to the
Texas Water Development Board
P. O. Box 12366
Austin, Texas 78711

State of Texas

WATER WELL REPORT

For TWDB use only
Well No. _____
Located on map _____
Received: _____

1) OWNER: Mrs. and Mr. Carl Ferrara
Person having well drilled CARISBAD TRK PARK Address 1101 N. MONTANA EL PASO Tx
(Name) (Street or RFD) (City) (State)
Landowner Mrs. and Mr. Carl Ferrara Address SAME
(Name) (Street or RFD) (City) (State)

2) LOCATION OF WELL:
County EL PASO miles to _____ direction from 6 mi. E. on H. 180
(City) (Town)

Locate by sketch map showing landmarks, roads, creeks,
highway number, etc.
6 mi. E. on H. 180
200' South of H. 180 North

(Use reverse side if necessary)

OR
Give legal location with distances and directions from
adjacent sections or survey lines.

Labor _____ League _____
Block 24-26-28 Survey _____
SECTION 24
(N 1/4, S 1/4, SW 1/4, SE 1/4) of Section _____

3) TYPE OF WORK (Check):
New Well ☒ Deepening _____
Reconditioning _____ Plugging _____
4) PROPOSED USE (Check):
Domestic ☒ Industrial _____ Municipal _____
Irrigation _____ Test Well _____ Other _____
5) TYPE OF WELL (Check):
Borehole ☒ Driven _____ Dug _____
Cable _____ Jetted _____ Bored _____

6) WELL LOG:
Diameter of hole 15" in. Depth drilled 440 ft. Depth of completed well 440 ft. Date drilled 7/71
All measurements made from GL ft. above ground level.

From (ft.)	To (ft.)	Description and color of formation material
0	10	SAND - SANDY
10	25	GRAVEL
25	40	CLAY
40	100	SAND - CLAY
100	125	SAND
125	340	SAND - CLAY
340	440	SAND

9) CASING:
Type: Old ☒ New ☒ Plastic _____ Other _____
Cemented from _____ ft. to _____ ft.

Diameter (inches)	Setting From (ft.)	To (ft.)	Code
8 1/2"	GL	440	256

10) SCREEN:
Type: _____
☒ Perforated ☐ Slotted
Diameter (inches) _____ Setting From (ft.) _____ To (ft.) _____ Slot Size _____

(Use reverse side if necessary)
7) COMPLETION (Check):
Straight well ☒ Gravel packed _____ Other _____
Under reamed _____ Open hole _____

8) WATER LEVEL:
Static level 300 ft. below land surface Date _____
Artesian pressure _____ lbs. per square inch Date _____
Depth to pump bowls, cylinder, jet, etc., 425 ft.
below land surface.

11) WELL TESTS:
Was a pump test made? Yes ☒ No ☐ If yes, by whom? _____
Yield: 28 gpm with _____ ft. drawdown after _____ hrs.
Bailer test _____ gpm with _____ ft. drawdown after _____ hrs.
Artesian flow _____ gpm
Temperature of water _____

12) WATER QUALITY:
Was a chemical analysis made? Yes ☒ No ☐
Did any strata contain undesirable water? Yes ☒ No ☐
Type of water? _____ depth of strata _____

I hereby certify that this well was drilled by me (or under my supervision) and that
each and all of the statements herein are true to the best of my knowledge and belief.

NAME J. D. BRADFORD Water Well Drillers Registration No. 1291
(Type or Print)
WELL 9001 Norton EL PASO TEXAS
(Street or RFD) (City) (State)
d) J. D. BRADFORD BRADFORD DRILLING CO.
(Water Well Driller) (Company Name)

Attach electric log, chemical analysis, and other pertinent information, if available.

* Instructions on reverse side.

JL 49-14-511

Typewrite (Black ribbon) or Print Plainly
(soft pencil or black ink)
Do not use ball point pen

Texas State Department of Health Laboratories
1100 West 40th Street
Austin, Texas 78756

TWDGE-GW ONLY	
Program No.	6584-50
Proj. No.	76291

CHEMICAL WATER ANALYSIS REPORT

Send report to:

Ground Water Data and Protection Division
Texas Water Development Board
P.O. Box 13087
Austin, Texas 78711

County	971 EL PASO
State-Well No.	JL 491423
Well No.	271
Date Collected	07 07 76

Location 1104B MONTANA EL PASO TX 79985
Source (type of well) SUBMERISABLE Owner J. GALVAN + McKEEVER - CARLETON TALE PARK
Date Drilled — Depth 440 ft. WBF MUSCO BOLSON
Producing intervals — Water level 47M ft.
Sampled after pumping — hrs. Yield — GPM — Temperature 80 °F
Point of collection FAUCET AT PUMP Appearance ☒ clear ☐ turbid ☐ colored ☐ other
Use DOM. Remarks SEND 1 COPY TO OWNER + 1 COPY TO FIELD DATA TEAM 3 EL PASO TEXAS

(FOR LABORATORY USE ONLY)

CHEMICAL ANALYSIS

AUG 19 1976

Laboratory No. 316970

Date Received JUL 28 1976

Date Reported —

	MG/L	ME/L
Calcium	28	2.75
Magnesium	55	1.10
Sodium	13	6.59
Total	152	10.44

	MG/L	ME/L
Carbonate	0	0
Bicarbonate	58	1.94
Sulfate	118	1.53
Chloride	74	7.10
Fluoride	252	0.5
Nitrate	0.5	4.5
pH	7.9	Total 10.57

[] Potassium		%Na
[] Manganese		SAR
[] Boron		RSC
3[C] Total Iron		

1) Dissolved Solids (sum in MG/L) 640

Phenolphthalein Alkalinity as CaCO₃ 0

Total Alkalinity as CaCO₃ 1.94 97

Total Hardness as CaCO₃ 3.85 193

2) Nitrogen Cycle

Ammonia - N

Nitrite - N

Nitrate - N

Organic Nitrogen

[] (other) MG/L

Specific Conductance (micromhos/cm³) 1121

Diluted Conductance (micromhos/cm³) 9 x 140

1260

[] items will be analyzed if checked.

1/ The bicarbonate reported in this analysis is converted by computation (multiplying by 0.4817) to an equivalent amount of carbonate, and the carbonate figure is used in the computation of this sum.

2/ Nitrogen cycle requires separate sample.

3/ Total Iron requires separate sample.

Analyst — Checked By —

Typewrite (Black ribbon) or
(soft pencil or black
Do not use ball point pen

Texas State Department of Health Laboratories
1100 West 49th Street
Austin, Texas 78756

JL-49-14-511
503

TWDBE-GW ONLY	
Program No.	6524-50
Proj. No.	76291

CHEMICAL WATER ANALYSIS REPORT

Send report to:

Ground Water Data and Protection Division
Texas Water Development Board
P.O. Box 13087
Austin, Texas 78711

County	971 EL PASO
State Well No.	JL 94-14-503
Well No.	
Date Collected	07-27-74
By	M. Priddy R. Hays

Location 11043 Montana EL PASO TX 79935
Source (type of well) SUBMERSIBLE Owner J. GALVAN + McKEEVER - CARLUCCI TRACT
Date Drilled Depth 440 ft. WBF HUECO PERSON
Producing intervals Water level UTM ft.
Sampled after pumping hrs. Yield GPM Temperature 50 °F
Point of collection FAUCET AT PUMP Appearance ☒ Clear ☐ turbid ☐ colored ☐ other
Use D.M. Remarks SEND 1 COPY TO OWNER + 1 COPY TO FIELD DATA TEAM
EL PASO TEXAS

(FOR LABORATORY USE ONLY)

CHEMICAL ANALYSIS

AUG 19 1976

Laboratory No. 316970

Date Received

Date Reported

	MG/L	ME/L
Chloride	28	
Calcium	55	2.75
Magnesium	13	1.10
Sodium	152	6.59
Total		10.44

[] Potassium		
[] Manganese		%Na
[] Boron		SAR
[] Total Iron		RSC

[] (other) MG/L

Specific Conductance (micromhos/cm²) 1121

Diluted Conductance (micromhos/cm²) 9 x 140

[] items will be analyzed if checked.

The bicarbonate reported in this analysis is converted by computation multiplying by 0.4917 to an equivalent amount of carbonate, and the carbonate figure is used in the computation of this sum.

[] Nitrogen cycle requires separate sample.

[] Total Iron requires separate sample.

	MG/L	ME/L
Carbonate	0	
58 Bicarbonate	118	1.94
Sulfate	74	1.53
Chloride	252	7.10
Fluoride	2.5	
Nitrate	4.5	
pH	7.9	Total 10.57

y Dissolved Solids (sum in MG/L) 640

Phenolphthalein Alkalinity as CaCO₃ 0

Total Alkalinity as CaCO₃ 1.94 97

Total Hardness as CaCO₃ 3.85 193

Ammonia - N

Nitrite - N

Nitrate - N

Organic Nitrogen

503
49-14-511

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer Huaco Balson

Field No. _____

State Well No. 49-14-512Owner's Well No. #1County El Paso1. Location: 1/4 Sec. 1/4 Sec. Block Fort Bliss Top 31° 49' 58" 106° 18' 35"2. Owner: Carlsted Mobil Home Park, Montana3. Manager: Manager, Jim Hardison4. Driller: Brown & Hedford5. Elevation of LSP is 3976 ft. above sea, determined by Topo6. Drilled: 19 60 ft. Depth Cable Tool, Rotary7. Depth: Rept. 430 ft. Meas. _____ ft.8. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed9. Pump: Mfr. Bradick & Bradick Type Submersible10. No. Stages _____ Bore Dia. _____ in., Setting 400 ft.

11. Column Dia. _____ in., Length Tailpipe _____ ft.

12. Motor: Paul Electric Make & Model _____ HP 5

13. Yield: Flow _____ gpm, Pump _____ gpm, Meas., Rept., Est. _____

14. Performance Test: Date 4-1-77 Length of Test _____ Made by _____

15. Static Level _____ ft. Pumping Level _____ ft. Drawdown _____ ft.

16. Production _____ gpm Specific Capacity _____ gpm/ft.

17. Water Level: HJM ft. Rept. 10-2-1973 above _____ below _____

18. _____ ft. Rept. _____ above _____ below _____

19. _____ ft. Rept. _____ above _____ below _____

20. _____ ft. Rept. _____ above _____ below _____

21. _____ ft. Rept. _____ above _____ below _____

22. Use: Dom., Stock Public Supply, Ind., Irr., Waterflooding, Observation, Not Used, provides water for trailer park & Red Dog Club

23. Quality: (Remarks on taste, odor, color, etc.) _____

24. Temp. _____ °F, Date sampled for analysis _____ Laboratory EPWU

25. Temp. _____ °F, Date sampled for analysis _____ Laboratory _____

26. Temp. _____ °F, Date sampled for analysis _____ Laboratory _____

27. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log, _____

28. Formation Samples, Pumping Test, _____

29. Record by _____ Date _____ 19 _____

30. Source of Data _____

31. Remarks: Carl Fazzera was the owner prior to Northeast Furniture (Mr. John Galvan)32. John Galvan & Tom Mc Keever own Northeast Furniture.

CASING & HEAVY PIPE			
Commented From		ft. to	
Diam. (in.)	Type	Setting, ft.	
		from	to
6	Steel	0	430

WELL SCREEN			
Screen Openings			
Diam. (in.)	Type	Setting, ft.	
		from	to
6	Screen		

49-14-512

APPENDIX E

**ECOLOGICAL ASSESSMENT – TIER 1 EXCLUSION CRITERIA
CHECKLIST**

TIER 1: Exclusion Criteria Checklist

This exclusion criteria checklist is intended to aid the person and the TNRCC in determining whether or not further ecological evaluation is necessary at an affected property where a response action is being pursued under the Texas Risk Reduction Program (TRRP). Exclusion criteria refer to those conditions at an affected property which preclude the need for a formal ecological risk assessment (ERA) because there are **incomplete or insignificant ecological exposure pathways** due to the nature of the affected property setting and/or the condition of the affected property media. This checklist (and/or a Tier 2 or 3 ERA or the equivalent) must be completed by the person for all affected property subject to the TRRP. The person should be familiar with the affected property but need not be a professional scientist in order to respond, although some questions will likely require contacting a wildlife management agency (i.e., Texas Parks and Wildlife Department or U.S. Fish and Wildlife Service). The checklist is designed for general applicability to all affected property; however, there may be unusual circumstances which require professional judgement in order to determine the need for further ecological evaluation (e.g., cave-dwelling receptors). In these cases, the person is strongly encouraged to contact TNRCC before proceeding.

Besides some preliminary information, the checklist consists of three major parts, **each of which must be completed unless otherwise instructed**. PART I requests affected property identification and background information. PART II contains the actual exclusion criteria and supportive information. PART III is a qualitative summary statement and a certification of the information provided by the person. **Answers to both PARTS I and II should reflect existing conditions and should not consider future remedial actions at the affected property, although it is understood that, at a minimum, human health will always be protected.** Completion of the checklist should lead to a logical conclusion as to whether further evaluation is warranted. Definitions of terms used in the checklist have been provided and users are strongly encouraged to familiarize themselves with these definitions before beginning the checklist.

Name of Facility: *Rubble Dump Spill Site – Near Site Monitor (SWMU 16)*

Affected Property Location: *11000 Montana Avenue
El Paso, Texas*

Mailing Address: *Ft Bliss, DOE ATZC
Building 622
Ft. Bliss, Texas 79916*

TNRCC Case Tracking #s: *Not applicable*

Solid Waste Registration #s: *SWMU 16*

Voluntary Cleanup Program #: *Not applicable*

EPA I.D. #s: *Not applicable*

PART I. Affected Property Identification and Background Information

- 1) Provide a description of the specific area of the response action and the nature of the release. Include estimated acreage of the affected property and the facility property, and a description of the type of facility and/or operation associated with the affected property. Also describe the location of the affected property with respect to the facility property boundaries and public roadways.

The Rubble Dump Spill Site is located southeast of Biggs Army Air Field just west of the Fort Bliss Site Monitor (radar) facility. A location map is provided as Figure 1. The site consists of an approximate one-mile section along a north-south trending power line easement that originates off of Montana Road in El Paso, El Paso County, Texas. The site has been identified as the area extending 100-feet on either side of the one-mile section of the power line easement. The site is located on the Fort Bliss Military Reservation, and was used as an unauthorized dumping area by unknown but presumed local persons. Historically, access was not controlled and this area of the Fort Bliss Military Reservation was not fenced or gated. The area was never used as a dump site by Fort Bliss, but could easily be accessed by others from Montana Road to dispose of general refuse and construction debris so as to avoid the disposal fees at the local landfill.

Response actions have been conducted at the site and include the following:

- *Repaired the existing earthen berm that extends approximately 1.7 miles along Montana Road and the Site Monitor access road to make access to the area more difficult.*
- *Installed a 4-strand barbwire fence along Montana Road and the Site Monitor access road to control access to the area and prevent future dumping.*
- *Excavated and disposed of approximately 6 cubic yards (CY) of hydrocarbon impacted soil.*
- *Removed and disposed of approximately 1,638 CY of non-hazardous construction debris.*
- *Removed and disposed of approximately four yards of ACM.*
- *Collected verification soil samples from the excavation areas and the site to document successful restoration of the site.*

Attach available USGS topographic maps and/or aerial or other affected property photographs to this form to depict the affected property and surrounding area. Indicate attachments:

☒ Topo map

☒ Aerial photo

☐ Other

- 2) Identify environmental media known or suspected to contain chemicals of concern (COCs) at the present time. Check all that apply:

Known/Suspected COC Location

- ☒ Soil \leq 5 ft below ground surface
☐ Soil $>$ 5 ft below ground surface
☐ Groundwater
☐ Surface Water/Sediments

Based on sampling data?

- | | |
|---|-----------------------------|
| <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| <input type="checkbox"/> Yes | <input type="checkbox"/> No |

Explain (previously submitted information may be referenced):



- 

- 

10

- 10

10

- 10

10

10

10

10

10

10

PART II. Exclusion Criteria and Supportive Information

Subpart A. Surface Water/Sediment Exposure (Complete in all cases.)

1) Regarding the affected property where a response action is being pursued under the TRRP, have COCs migrated and resulted in an unauthorized release or imminent threat of unauthorized release to either surface waters or to their associated sediments? Exclude wastewater treatment facilities and stormwater conveyances/impoundments authorized by permit. Also exclude conveyances, decorative ponds, and those portions of process facilities which are:

a. Not in contact with surface waters of the State or other surface waters which are ultimately in contact with surface waters of the State; and

b. Not consistently or routinely utilized as valuable habitat for natural communities including birds, mammals, reptiles, etc.

☐ Yes

☒ No

Explain: *The ground surface at the site is only covered with approximately 10% – 20% vegetated. Observations made during the field investigation indicate that drainage from the site varies along the power line easement. No natural gullies or creeks cross the site.*

If the answer is Yes to Subpart A above, the affected property does not meet the exclusion criteria. Skip Subparts B – D and complete PART III - Qualitative Summary and Certification . If the answer is No, go to Subpart B.

Subpart B. Affected Property Setting (Complete only if “No” provided in Subpart A.)

In answering “Yes” to the following question, it is understood that the affected property is not attractive to wildlife or livestock, including threatened or endangered species (i.e., the affected property does not serve as valuable habitat, foraging area, or refuge for ecological communities). (May require consultation with wildlife management agencies.)

1) Is the affected property wholly contained within contiguous land characterized by: pavement, buildings, landscaped area, functioning cap, roadways, equipment storage area, manufacturing or process area, other surface cover or structure, or otherwise disturbed ground?

☐ Yes

☒ No

Explain: *The site is undeveloped land which previously had public access. During the response actions, a 4-strand barbwire fence was constructed to limit access to the site for further dumping. The site is located on Ft. Bliss and has restricted access.*

If the answer to Subpart B above is Yes, the affected property meets the exclusion criteria. Skip Subparts C and D and complete PART III - Qualitative Summary and Certification. If the answer to Subpart B above is No, go to Subpart C.

Subpart C. Soil Exposure (Complete only if "No" provided in Subpart B.)

- 1) Are COCs which are in the soil of the affected property solely below the first 5 feet beneath ground surface or does the affected property have a physical barrier present to prevent exposure of receptors to COCs in surface soil?

☐ Yes

☒ No

Explain: Impacted soils have been excavated and disposed off-site. Based on analytical results of soil verification samples, concentration of constituents remaining in place are below the critical Tier 1 PCLs for residential land use.

If the answer to Subpart C above is Yes, the affected property meets the exclusion criteria. Skip Subpart D and complete PART III - Qualitative Summary and Certification. If the answer to Subpart C above is No, proceed to Subpart D.

Subpart D. De Minimus Land Area (Complete only if "No" provided in Subpart C.)

In answering "Yes" to the question below, it is understood that all of the following conditions apply:

- The affected property is not known to serve as habitat, foraging area, or refuge to threatened/endangered or otherwise protected species. (Will likely require consultation with wildlife management agencies.)
- Similar but unimpacted habitat exists within a half-mile radius.
- The affected property is not known to be located within one-quarter mile of sensitive environmental areas (e.g., rookeries, wildlife management areas, preserves). (Will likely require consultation with wildlife management agencies.)
- There is no reason to suspect that the COCs associated with the affected property will migrate such that the affected property will become larger than one acre.

- 1) Using human health protective concentration levels as a basis to determine the extent of the COCs, does the affected property consist of one acre or less and does it meet all of the conditions above?

☒ Yes

☐ No

Explain how conditions are met/not met:

If the answer to Subpart D above is Yes, then no further ecological evaluation is needed at this affected property.

Complete PART III - Qualitative Summary and Certification. If the answer to Subpart D above is No, proceed to Tier 2 or 3 or comparable ERA.

PART III. Qualitative Summary and Certification (Complete in all cases.)

Attach a brief statement (not to exceed 1 page) summarizing the information you have provided in this form. This summary should include sufficient information to verify that the affected property meets or does not meet the exclusion criteria. The person should make the initial decision regarding the need for further ecological evaluation (i.e., Tier 2 or 3) based upon the results of this checklist. After review, TNRCC will make a final determination on the need for further assessment. **Note that the person has the continuing obligation to re-enter the ERA process if changing circumstances result in the affected property not meeting the Tier 1 exclusion criteria.**

The site is a relatively flat rectangular-shaped property consisting of approximately 25 acres. The United States Geological Survey (USGS) quadrangle map, presented as Figure 1, indicates that the site lies at an elevation of approximately 3,965 feet above mean sea level. The ground surface at the site is covered with approximately 80% soils and 20% vegetation. Observations made during the field investigation indicate that drainage from the site varies along the power line easement.

No natural gullies or creeks cross the site. The nearest receiving body of water is an unnamed pond located approximately 1,500 feet southwest of the site. The first downstream classified segment has been identified as the Rio Grande below the International Dam (Segment No. 2308).

The site is not attractive to wildlife or livestock, including threatened or endangered species. The site does not appear to serve as valuable habitat, foraging area, or refuge for ecological communities.

Impacted soil exceeding the Tier 1 PCLs have been excavated and transported off-site for disposal. The excavation areas were backfilled to surface grade.

Based on this information, the site meets the exclusion criteria and no further ecological evaluation is warranted.

Completed by: Greg S. Braddy (Typed/Printed Name)

Project Manager (Title)

2 March 2001 (Date)

I believe that the information submitted is true, accurate, and complete, to the best of my knowledge.

David Dodge (Typed/Printed Name of Person)

Ft Bliss Restoration Program Manager (Title of Person)

(Signature of Person)

(Date Signed)

Texas Clean Rivers Program

Rio Grande Basin

Study Area

The study area of the CRP Rio Grande Basin encompasses the international reach of the Rio Grande/Rio Bravo from the New Mexico/Texas/ Chihuahua border (El Paso/Cuidad Juarez area) to the Gulf of Mexico (Brownsville/ Matamoros area). The entire Rio Grande/Rio Bravo watershed covers an area approximately 924,300 square kilometers (335,000 square miles), with approximately half the watershed in the United States and the other half in Mexico. For the purpose of coordination and planning, the Rio Grande/Rio Bravo has been divided into four sub-basins: the Upper Sub-Basin extending from the New Mexico/ Texas state line downstream to International Amistad Reservoir; the Pecos River Sub-Basin; the Middle Sub-Basin from International Amistad Reservoir downstream to International Falcon Reservoir and including the Devil's River; and the Lower Sub-Basin from International Falcon Reservoir downstream to the Gulf of Mexico.



- 2117 Frio River Above Choke Canyon Reservoir - from a point 4.2 kilometers (2.6 miles) downstream of SH 16 in McMullen County to a point 100 meters (110 yards) upstream of US 90 in Uvalde County
- 2201 Arroyo Colorado Tidal - from the confluence with Laguna Madre in Cameron/Willacy County to a point 100 meters (110 yards) downstream of Cemetery Road south of Port Harlingen in Cameron County
- 2202 Arroyo Colorado Above Tidal - from a point 100 meters (110 yards) downstream of Cemetery Road south of Port Harlingen in Cameron County to FM 2062 in Hidalgo County (includes La Cruz Resaca, Llano Grande Lake, and the Main Floodway)
- 2203 Petronila Creek Tidal - from the confluence of Chiltipin Creek in Kleberg County to a point 1 kilometer (0.6 mile) upstream of private road crossing near Laureles Ranch in Kleberg County
- 2204 Petronila Creek Above Tidal - from a point 1 kilometer (0.6 mile) upstream of private road crossing near Laureles Ranch in Kleberg County to the confluence of Agua Dulce and Banquete Creeks in Nueces County
- 2301 Rio Grande Tidal - from the confluence with the Gulf of Mexico in Cameron County to a point 10.8 kilometers (6.7 miles) downstream of the International Bridge in Cameron County
- 2302 Rio Grande Below Falcon Reservoir - from a point 10.8 kilometers (6.7 miles) downstream of the International Bridge in Cameron County to Falcon Dam in Starr County
- 2303 International Falcon Reservoir - from Falcon Dam in Starr County to the confluence of the Arroyo Salado (Mexico) in Zapata County, up to the normal pool elevation of 301.1 feet (impounds Rio Grande)
- 2304 Rio Grande Below Amistad Reservoir - from the confluence of the Arroyo Salado (Mexico) in Zapata County to Amistad Dam in Val Verde County
- 2305 International Amistad Reservoir - from Amistad Dam in Val Verde County to a point 1.8 kilometers (1.1 miles) downstream of the confluence of Ramsey Canyon on the Rio Grande Arm in Val Verde County and to a point 0.7 kilometer (0.4 mile) downstream of the confluence of Painted Canyon on the Pecos River Arm in Val Verde County and to a point 0.6 kilometer (0.4 mile) downstream of the confluence of Little Satan Creek on the Devils River Arm in Val Verde County, up to the normal pool elevation of 1117 feet (impounds Rio Grande)
- 2306 Rio Grande Above Amistad Reservoir - from a point 1.8 kilometers (1.1 miles) downstream of the confluence of Ramsey Canyon in Val Verde County to the confluence of the Rio Conchos (Mexico) in Presidio County
- 2307 Rio Grande Below Riverside Diversion Dam - from the confluence of the Rio Conchos (Mexico) in Presidio County to Riverside Diversion Dam in El Paso County
- 2308 Rio Grande Below International Dam - from the Riverside Diversion Dam in El Paso County to International Dam in El Paso County
- 2309 Devils River - from a point 0.6 kilometer (0.4 mile) downstream of the confluence of Little Satan Creek in Val Verde County to the confluence of Dry Devils River in Sutton County
- 2310 Lower Pecos River - from a point 0.7 kilometer (0.4 mile) downstream of the confluence of Painted Canyon in Val Verde County to a point immediately upstream of the confluence of Independence Creek in Crockett/Terrell County

RIO GRANDE BASIN		USES				CRITERIA						
		Recreation	Aquatic Life	Domestic Water Supply	Other	Cl ⁻¹ (mg/L)	SO ₄ ⁻² (mg/L)	TDS (mg/L)	Dissolved Oxygen (mg/L)	pH Range (SU)	Indicator Bacteria #/100ml	Temperature (°F)
Segment No.	SEGMENT NAME											
2301	Rio Grande Tidal	CR	E						5.0	6.5-9.0	35/200	95
2302	Rio Grande Below Falcon Reservoir	CR	H	PS		270	350	880	5.0	6.5-9.0	126/200	90
2303	International Falcon Reservoir	CR	H	PS		200	300	1,000	5.0	6.5-9.0	126/200	93
2304	Rio Grande Below Amistad Reservoir	CR	H	PS		200	300	1,000	5.0	6.5-9.0	126/200	95
2305	International Amistad Reservoir	CR	H	PS		150	270	800	5.0	6.5-9.0	126/200	88
2306	Rio Grande Above Amistad Reservoir	CR	H	PS		300	570	1,550	5.0	6.5-9.0	126/200	93
2307	Rio Grande Below Riverside Diversion Dam	CR	H	PS		300	550	1,500	5.0 ²	6.5-9.0	126/200	93
2308	Rio Grande Below International Dam	NCR	L	PS		250	450	1,400	3.0	6.5-9.0	605/2,000	95
2309	Devils River	CR	E	PS		50	50	300	6.0	6.5-9.0	126/200	90
2310	Lower Pecos River	CR	H	PS		1,700	1,000	4,000	5.0	6.5-9.0	126/200	92
2311	Upper Pecos River	CR	H			7,000	3,500	15,000	5.0	6.5-9.0	126/200	92
2312	Red Bluff Reservoir	CR	H			3,200	2,200	9,400	5.0	6.5-9.0	126/200	90
2313	San Felipe Creek	CR	H	PS		50	50	400	5.0	6.5-9.0	126/200	90
2314	Rio Grande Above International Dam	CR	H	PS		340	600	1,800	5.0	6.5-9.0	126/200	92

¹ The indicator bacteria for freshwater is *E. coli* and Enterococci for saltwater. Fecal coliform is an alternative indicator.

² The dissolved oxygen criterion in the upper reach of Segment 2307 (Riverside Diversion Dam to the end of the rectified channel below Fort Quitman) shall be 3.0 mg/L when headwater flow over the Riverside Diversion Dam is less than 35 ft³/s.

APPENDIX F

**LABORATORY ANALYTICAL REPORTS – Final Verification Soil
Samples**

**APPENDIX F
DATA VALIDATION REPORTS FOR RUBBLE
DUMP SPILL SITE VERIFICATION SAMPLES
FORT BLISS TEXAS**

Data validation was performed on the verification samples that were collected from the Fort Bliss Rubble Dump Spill. For the validation, analytical performance criteria (i.e. holding times, spike recoveries, etc.) were compared to prescribed control limits which are specified in the method or are generally accepted in the field. Each of the sample batches were evaluated with respect to accuracy, precision, representativeness, and completeness. Accuracy has been evaluated according to surrogate recoveries, matrix spike and matrix spike duplicate recoveries (MS/MSD) and laboratory control samples and/or blank spikes and their duplicates (LCS and/or BS/BSD). Precision has been evaluated according to the results of relative percent difference (RPD) calculations. The validation did not include a review of chromatographs or recalculation of surrogate recoveries. The results of this evaluation are listed below for each sample batch. It should be noted that the validation effort has identified occasional samples with biased results as reflected in Table 2 of the Response Action Completion Report.

BATCH 200970

The samples were received intact and chain-of-custody documentation and seals were in place upon arrival at the laboratory. Internal cooler temperatures associated with the sampling event were noted below $4^{\circ}\pm 2$ Centigrade. This batch contained five samples for metals analysis, and one sample for PCBs analysis.

HOLDING TIMES

The extraction and analysis holding times were met for all samples associated with this batch.

REPORTING LIMITS

The reporting limits for the samples were appropriate for the project. The reporting limits utilized for the collected samples are below the Texas Risk Reduction Program (TRRP) Protective Concentration Levels (PCLs).

ACCURACY

Calibration Verification

Initial and second source calibration logs were within prescribed control limits.

MS/MSD Recoveries

The spike recoveries (MS) for barium, cadmium, and chromium were reported above the prescribed upper control limits (UCLs). The spike duplicate recovery (MSD) for arsenic was reported above the UCL, and the spike duplicate recovery for chromium was reported below the lower control limit (LCL). Since both the spike and spike duplicate recoveries for chromium were outside of the prescribed control limits, the verification sample results have been qualified as estimated with no bias direction (high or low).

The MS/MSD recoveries associated with the PCB analysis were reported within the prescribed control limits.

LCS Recoveries

The LCS recoveries were within the prescribed control limits.

Surrogate Recoveries

The surrogate recoveries associated with the PCB analysis were reported within the prescribed control limits.

PRECISION

A replicate analysis was performed, and the RPDs for barium, cadmium, chromium, lead, and silver were reported above the prescribed control limit of 20%. The associated results for these samples within the batch have been qualified estimated.

REPRESENTATIVENESS

All method blanks were reported with no detectable levels of analyzed constituents.

COMPLETENESS

The 95% overall completeness goal for the project was met for this sample batch.

BATCH 201609

The samples were received intact and chain-of-custody documentation and seals were in place upon arrival at the laboratory. Internal cooler temperatures associated with the sampling event were noted below $4^{\circ}\pm 2$ Centigrade. This batch contained one sample for SPLP metals analysis.

HOLDING TIMES

The extraction and analysis holding times were met for the sample associated with this batch.

REPORTING LIMITS

The reporting limits for the samples were appropriate for the project. The reporting limits utilized for the collected samples are below the Texas Risk Reduction Program (TRRP) Protective Concentration Levels (PCLs).

ACCURACY

Calibration Verification

Initial and second source calibration logs were within prescribed control limits.

MS/MSD Recoveries

The spike recoveries were within the prescribed control limits.

LCS Recoveries

The LCS recoveries were within the prescribed control limits.

PRECISION

A replicate analysis was performed, and the RPDs were within the prescribed control limits.

REPRESENTATIVENESS

All method blanks were reported with no detectable levels of analyzed constituents.

COMPLETENESS

The 95% overall completeness goal for the project was met for this sample batch.

BATCH 201497

The samples were received intact and chain-of-custody documentation and seals were in place upon arrival at the laboratory. Internal cooler temperatures associated with the sampling event were noted below $4^{\circ}\pm 2$ Centigrade. This batch contained five samples for PAH analysis.

HOLDING TIMES

The extraction and analysis holding times were met for the sample associated with this batch.

REPORTING LIMITS

The reporting limits for the samples were appropriate for the project. The reporting limits utilized for the collected samples are below the Texas Risk Reduction Program (TRRP) Protective Concentration Levels (PCLs). One exception was for sample RDS-100 where the reporting limit for dibenz(a,h)anthracene (0.85 mg/kg) was reported above the TRRP PCL of 0.55 mg/kg due to a diluted run.

ACCURACY

Calibration Verification

Initial and second source calibration logs were within prescribed control limits.

MS/MSD Recoveries

The MS/MSD analyses were performed on sample RDS-100, and the spiked compounds were diluted out. The laboratory control sample recoveries were reported within limits, and the non-detected results within the normal sample analysis have been accepted at the higher reporting limits arrived at after dilution.

LCS Recoveries

The LCS recoveries were within the prescribed control limits.

Surrogate Recoveries

The surrogate recoveries were diluted out.

PRECISION

Duplicate or replicate analyses were not performed for this batch.

REPRESENTATIVENESS

The method blanks were reported with no detectable levels of analyzed constituents.

COMPLETENESS

The 95% overall completeness goal for the project was met for this sample batch.